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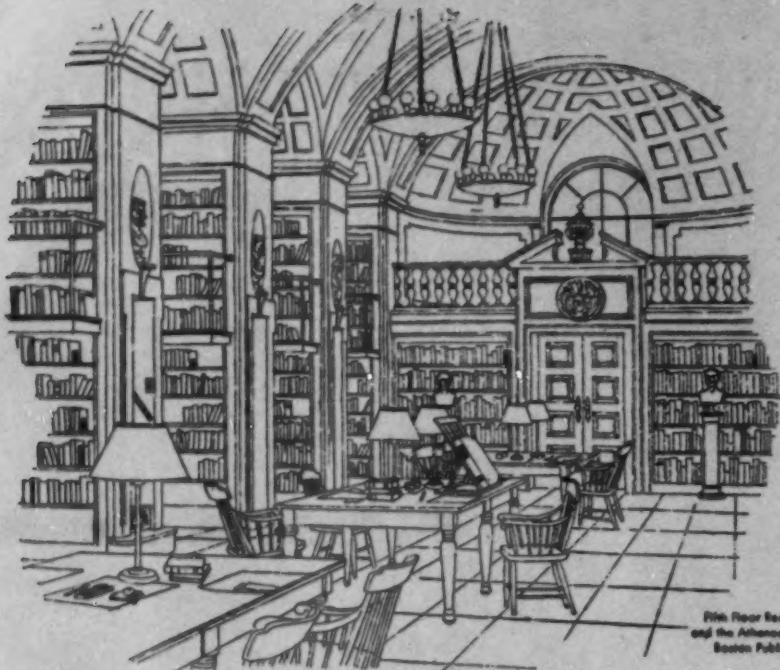
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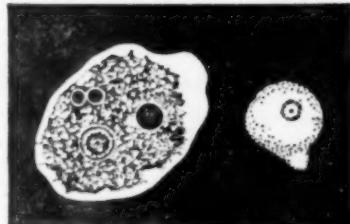
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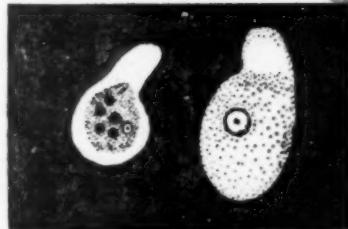
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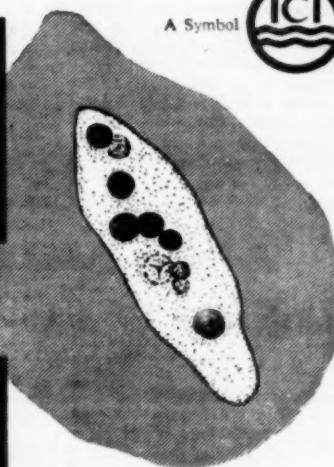
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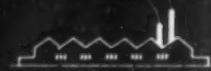
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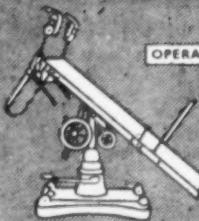
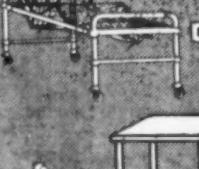
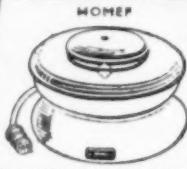
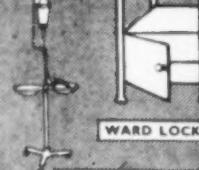
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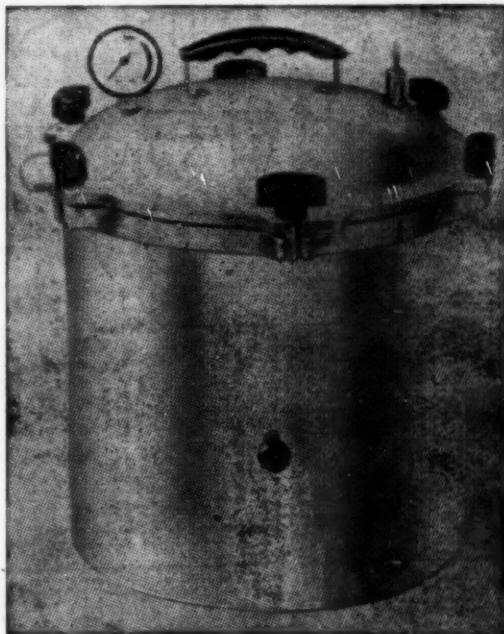
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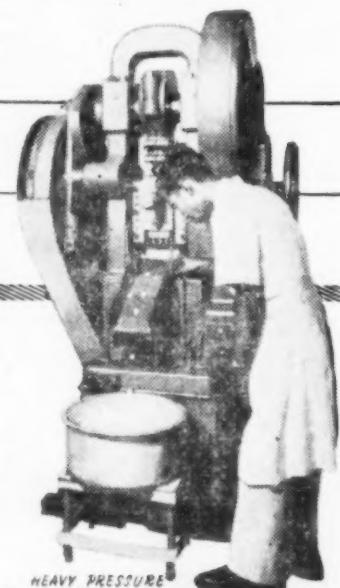
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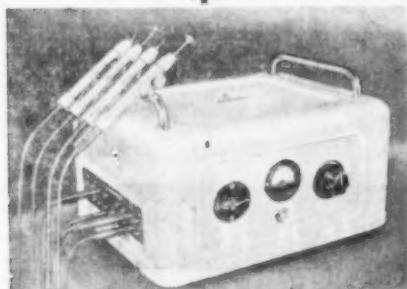
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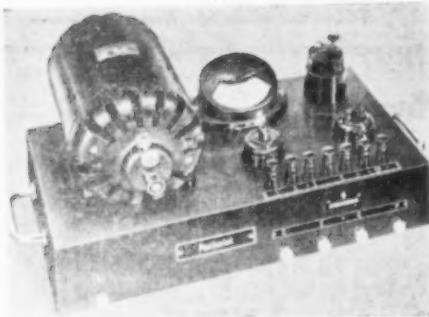
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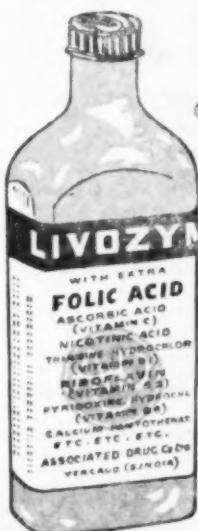
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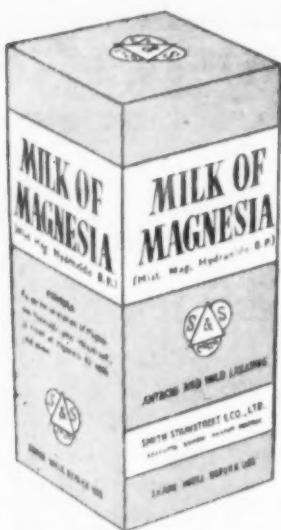
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¹ Hetreed, F. W., Med. Clin. North America, P. 205, Jan. 1949

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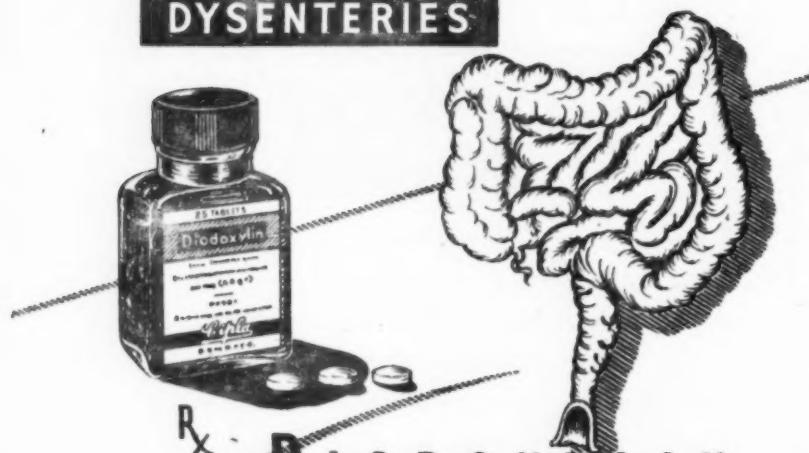
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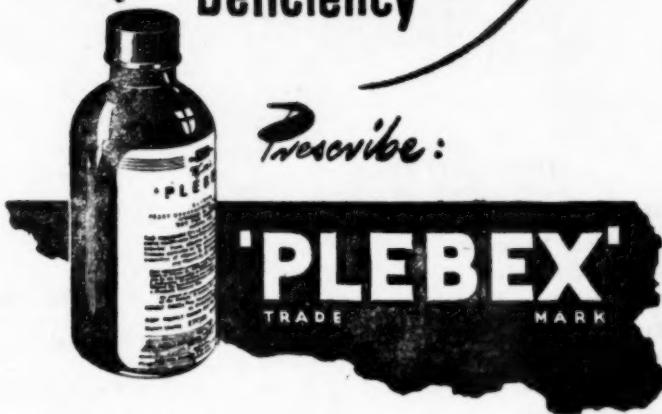
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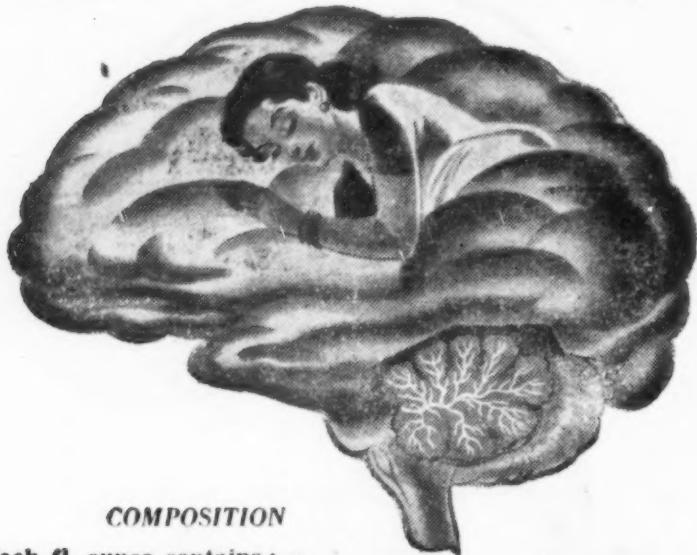
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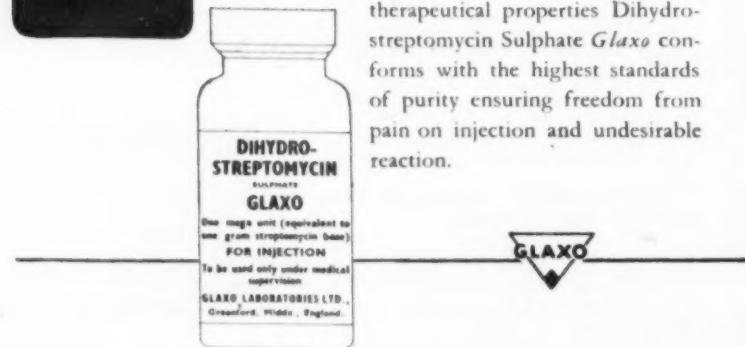
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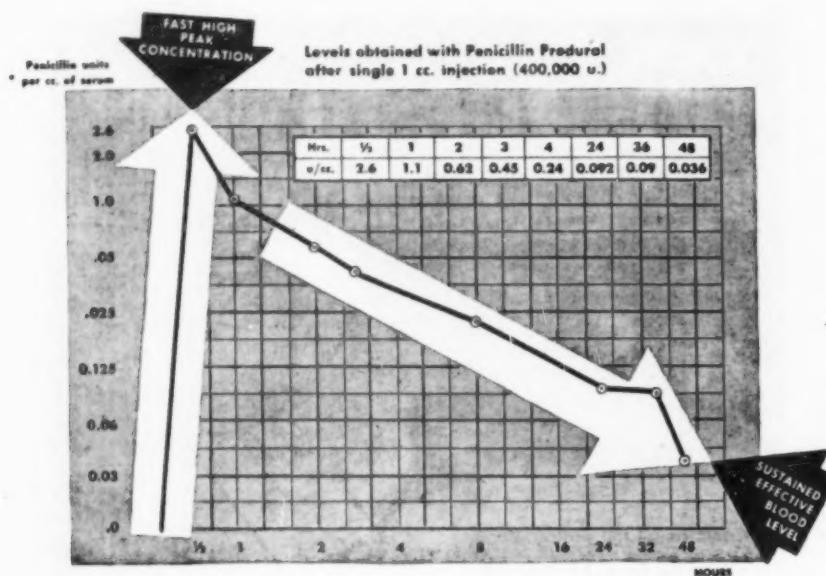
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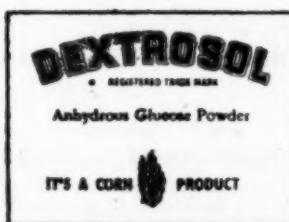
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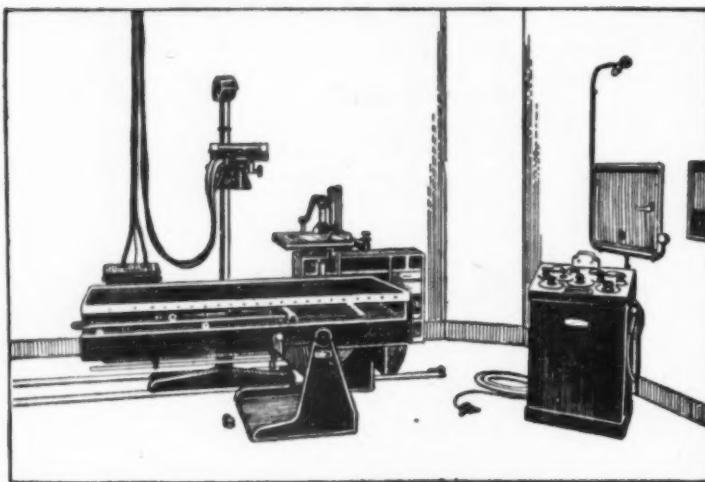
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Original Articles

CHANGING TRENDS IN SURGERY OF HERNIA*

R. J. MANEKSHA, F.R.C.S. (ENG.).

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DR. AMOS KOONTZ of Baltimore, has some interesting remarks to make in a recent article. "It is somewhat disconcerting and indeed humiliating, for a competent surgeon not to be able to assure a patient that he can be definitely cured surgically of such a supposedly simple condition as a small inguinal hernia. Yet a glance at the recurrence rates, as reported in contemporary literature, is enough to assure even the most naive surgeon with the utmost self confidence, that he cannot promise his patient that he will certainly cure him. This is enough to give pause, not only to the patient, but to the surgeon as well". We have paused and considered ways and means to improve and benefit by experience in the search of methods, one better than the last for the benefit of the patient.

Notable amongst advances in hernial surgery are the cutis graft of Mair and the use of Tantalum mesh gauze in the repair of the hernial defect. In addition to these, I have now been using Nylon suture material in all cases with benefit. (*Vide infra*).

The following are the types of hernia cases encountered in practice :—

A. Hernia in young children and in healthy adults.—In some the bulging is noticed in infancy and due to home treatment

* Specially contributed to THE ANTISEPTIC.

the bulge disappears—only to occur again after a few years as a result of sudden strain—e.g., about of severe coughing, lifting heavy weight or even a fall. In such cases a congenital sac is present. On operation a thin, fragile sac is found and the patient is cured with a high ligation of the sac at its neck. No muscular repair is necessary as it is not disturbed.

B. Hernia of the indirect type in an average adult with fair musculature.—The common causes of hernia are recurrent episodes of increased intra-abdominal pressure—cough and constipation, with straining at micturition. Besides the removal or prevention of the cause these cases require high ligation of the sac and strengthening of the posterior wall by apposition of the conjoint tendon to the Cooper's and the Poupart's ligaments.

C. Hernia in old age is generally of the direct variety with a large internal ring. The primary need is to find out the causes and treat them; again chronic cough, constipation and straining at micturition (due to an enlarged prostate, growth or stricture) are the main causes. Only if these can be removed, will it be worthwhile tackling the hernia as otherwise, a recurrence of the hernia is certain. In some cases where the hernia is due to poor musculature, repair is best done either by the Mair's operation or by the tantalum mesh gauze. These are also the cases that are liable to get a strangulation of the hernia and the strangulating ring is the external oblique aponeurosis. The operation is an emergency one designed to save life; particularly in late strangulations—the best repair that can be done under the circumstances may not be the ideal one.

D. Recurrent hernias occur generally in elderly patients who were not good surgical risks at the first operation; the cause therefore still persists; poor musculature and bad surgical technique may also be factors operating. It is very important to search for the cause of recurrence. This requires sound judgement to decide whether a re-operation is needed or a truss treatment would do. Recurrent hernias are ideally treated with either Mair's repair or by the Tantalum gauze mesh.

E. Incisional hernias are common in females and are mostly in the infra-umbilical midline region. Repeated pregnancies constitute an important cause owing to the weakened poor musculature. A Mair's operation is the ideal one in selected cases.

Principles of Hernial Surgery

The ideals to be aimed at in order to obtain the best results are as under :—

(1) Stripping of the hernial sac from its surrounding areolar fatty tissue and stripping high up the neck of the sac which is then ligatured at that level.

(2) Thinning of the cord to keep only the vital elements—again thus removing all fatty tissue round it.

(3) Deep ring—when the deep ring in an indirect hernia is enlarged it should be closed so as to allow the cord to come out snugly—thus avoiding an indirect recurrence.

(4) Structures to be approximated should be devoid of areolar and loose tissue, if the union is to be a sound one. Hence, cleaning the margins of the conjoint tendon, Poupart and Cooper's ligament is essential. Approximation by using non-absorbable sutures without any tension on them. For this purpose, I use as a routine only Ny'on suture.

(6) Using either a cutis graft, fascial graft or foreign material like tantalum to fill up a gap in selected cases where local tissues will not accomplish proper reconstruction and hence in :—

- (i) Hernia in old people with poor musculature.
- (ii) Recurrent hernia.
- (iii) Sliding hernia with voluminous neck.
- (iv) Direct hernias with weakness in Hesselbach's triangle.
- (v) Large incisional hernias.

Two factors which require further discussion are :—(a) The ideal non-absorbable suture material. (b) Experience with the cutis graft.

I. Nylon repair.—Early in my practice, I used catgut for the repair of the posterior wall of the inguinal canal as a routine measure. Being absorbable it was doubtful whether after its absorption the layers still remained in position. Non-absorbable materials like thread and silk proved disappointing as the post-operative sinuses in cases operated elsewhere showed. Silver wire was tried in a few cases but its main disadvantage was that it cut through the muscle layer. For the last 2 years, nylon has been systematically used in transfixing ligation of the sac as well as for the repair of the posterior inguinal wall, with excellent results.

The following are the advantages of nylon over other suture materials :—

(1) It is quite inert within the tissues and does not produce any foreign body reaction as does catgut, linen or silk.

(2) The incidence of sepsis is minimum and nylon has no tendency to extrude out of the wound. Actually in the post-operative period there is hardly any rise of temperature, neither is there any reaction in the operated area. This has been consistently noticed, ever since the use of catgut in deeper repair was stopped. Its one disadvantage is that the knot is liable to slip ; hence generally a surgeon's knot or about 4 knots are applied and a continuous suture is preferred to interrupted ones so as to diminish the number of knots tied. The external oblique and fatty layers are however, sutured with catgut, as the patient often feels the presence of

nylon in these layers. Again the skin is sutured with nylon as it has no capillary action and no infection from the skin surface can travel along the suture material. There is absence of pain in the operated area from the very beginning and this aids in the early recovery of the patient.

Dr. T. H. Sommervell of Vellore stated in a discussion on Inguinal Hernia (*Indian Journal of Surgery*, Dec. 1950) :—

“Nowadays I very seldom use a Gallie suture at all, as nylon seems to be very well tolerated by the tissues, and if a treble knot is tied, it does not slip. The posterior wall of the canal can be repaired either by a continuous suture of nylon uniting conjoint tendon to inguinal ligament or by a darning method if direct hernia is feared as a sequel.”

The results were so satisfactory that I started using nylon to suture the Mair's graft in position by a continuous stitch method to be described later.

II. Mair's operation.—In 1938 Mair published a paper in which he advocated using the skin as a graft in hernia operations—the idea was not however, new, as Loeur had first used it in 1913 and Rehn in 1914. They removed the epidermal layer but unfortunately their results were marred by sepsis of the wound. Mair then reintroduced this method after experimental study in animals; he did not remove the epidermis but found that if the graft is tautly fixed, atrophy of the epidermis occurs. He also found that the rate of sepsis was 2·3 per cent. Since the publication of his paper a very large number of surgeons have tried this method and have advocated the same in preference to others indicated in the following types of cases :—(1) Large direct hernias. (2) Recurrent hernias with tissue deficiency. (3) Large scrotal indirect hernias of long standing. (4) Incisional hernias. (5) Sliding hernias with voluminous neck.

This method has got definite advantages over the other methods, like Gallie's repair with fascia lata, darning method using floss-silk, kangaroo tendon and the like.

(1) Since the skin graft is easily obtained from either flap of the skin wound, no second operation is necessary as in the Gallie repair and this avoids a second scar on the body.

(2) The skin graft is of sufficient strength and forms a very strong septum in the posterior inguinal wall. Fascial graft taken from the external oblique aponeurosis does not effect such a good repair. The lattice repair using floss silk and other materials does not form a continuous membrane and depends on surrounding fibroblasts to fill it up ultimately with intervening fibrous tissue; the incidence of sepsis is also higher and a great nuisance results if one end of the floss silk starts protruding out of the wound surface.

(3) The incidence of sepsis—the author had one case of sepsis in a series of over 75 in which this method was used. Actually it was the first case done by this method and the graft was not as taut as it should have been; sepsis has not been subsequently encountered even though in some cases no antibiotics were administered in public hospitals. Nylon suture was the anchoring material for the graft in all cases.

The actual operation as performed by me varies from the Mair's method. Preoperative skin preparation is done on the previous evening and on the morning of the operation. Cleaning is done with soap and water and then with ether or spirit. Strong iodine is *not* applied. During operation the area is painted with 2 per cent Cetavlon (I.C.I.) in water and then the soapy Cetavlon solution is removed with ether. Anæsthesia varies with the patient, spinal (Stovaine and Nupercain) being used in the majority of cases. The essential part of the operation is to define clearly the area of weakness in the posterior wall of the inguinal canal, clear it of all redundant tissue and judge the size of the gap.

The skin towel is then removed from the upper flap and an ellipse of skin is removed, the ends are caught with Allis forceps and fatty layer is thoroughly removed with a pair of curved Mayo's scissors. The end selected for the lateral side of the gap is next split to encircle the cord. Using nylon (medium size) with a curved cutting needle the medial end of the graft is first fixed to the periosteum over the pubic tubercle or on the medial end of the Cooper's ligament (utilizing the Cooper's ligament instead of the Poupart's is a modification stressed by Anson and MacVay (1942) and has the advantage of a more stable anchorage than the mobile Poupart ligament, also the conjoint tendon and the cutis graft are on a deeper level when united with this structure). The lateral two ends of the graft are next fixed to the conjoint tendon neatly encircling the cord. The uncut end of the nylon suture from the medial side is next used to fix the graft to the remaining part of the Cooper's ligament and laterally to the upturned edge of the Poupart ligament. The end of nylon is knotted to the fixation suture used laterally. Again the long strand of nylon from the lateral end is used to fix the conjoint tendon to the top edge of the cutis graft. Thus the graft is applied in such a way that it is felt to be quite taut to the operator's finger. If there is any doubt, extra sutures are put on from the superior edge of the graft to the under surface of the external oblique aponeurosis. I place the graft with the skin surface upwards. No penicillin is injected into the graft.

Some surgeons first approximate the conjoint tendon to the two ligaments and then the graft is placed on top so as to form a second line of defence against recurrence. The author has tried this method but its disadvantage is that it may stretch the conjoint tendon too much at the first step and if it can be easily

approximated to the Poupart and Cooper's ligament, then there may be no need for the cutis graft. The cord is placed either in the canal or is brought out subcutaneously, thus quite obliterating the canal, the slight disadvantage being an uneasy feeling in the groin later complained by some patients.

The external oblique is sutured with continuous catgut stitches and the fat with interrupted inverted stitches with the same material.

Skin sutures with nylon :—Before the skin incision is closed acriflavine (1 : 1000) is poured into the area. Procaine penicillin 4 lacs is injected once a day for 3 to 4 days when financial conditions of the patient permit.

Post-operative recovery is remarkable, and is without any reactionary fever or pain. Skin sutures are generally removed in 10 days and the patient is allowed to get out of bed about the same time. They are advised to come for the first follow-up after 15 days and then regularly every 3 months.

Recurrence rate :—In a series of 50 cases operated by Mair's method, one case developed a bulge at the site of repair manifestly due to the patient neglecting to have his constipation treated. It was detected in the routine follow-up and the patient had no complaints. Although this series is small and the period of follow-up is also very short, still it is safe to assert that in selected cases it is certainly the operation of choice.

Tantalum gauze mesh :—Producing a barrier with this stuff has been reported in foreign literature. I have however had no experience of this method, so far, but it is almost certain to mark an advance in hernial surgery.

Conclusion.—I wish to stress the advantages of the Mair's method of hernial repair, which has been found by many surgeons to be very useful and efficient, particularly in difficult cases of hernias. It is certainly a method with a great future in hernial surgery especially, when nylon is used as the suture material. The use of the Cooper's ligament medial to the femoral vein, in repair of the posterior wall of the inguinal canal is yet another useful modification due to its very strong and immobile character and should go a long way to eliminate a direct recurrence.

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MALNUTRITION AMONG CHILDREN IN MADRAS*

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"Malnutrition is unfortunately a scourge of the poor, a class which includes the majority of pigmented peoples all over the world..... Where good food is unevenly distributed among the various sections of the population, so that one section lives in plenty and the other in want, malnutrition becomes a social disgrace and casts reflection on the integrity and social conscience of a nation".—Gillman.

HOLT in his 'Diseases of Infancy and Childhood' has mentioned about a child who was fed exclusively on Milk of Magnesia in the belief that this was a milk preparation similar to Cow and Gate, Lactogen etc. If such ignorance is possible in the U.S.A., one need not be surprised at seeing so many cases of malnutrition in India developing as a result of ignorance. The infant mortality in India varies from 122 to 180, malnutrition accounting for a high percentage. In contrast to this, infant mortality in the Western countries like the U.S.A., England, Denmark, Norway and Sweden varies between 30 and 50. An enquiry into the diet of the infants and children attending this hospital has revealed some startling facts ; some mothers had fed their babies only on coffee ! There is a deep-rooted belief in most people that rice is the best and a most essential food for the child. I have seen mothers surreptitiously feeding children with very severe diarrhoea, on rice and dhal. The quality of food eaten by the majority of people in Madras is most unsatisfactory. Rice forms the staple food and polished rice is preferred to the unpolished variety. This rice is cooked with an excess of water which is later discarded as 'conjee.' Much of the vitamin content is thereby lost. Milk, meat, fish and eggs are rarely used. Breast-fed infants whose mothers live on this diet, or children fed on such poor diet are naturally in a chronic state of undernourishment. This sets up a vicious circle. The child begins to lose weight and the anxious mother increases the quantity of this food, hoping that the child would thereby regain the lost weight. Instead it only starts a diarrhoea which contributes towards the malnutrition.

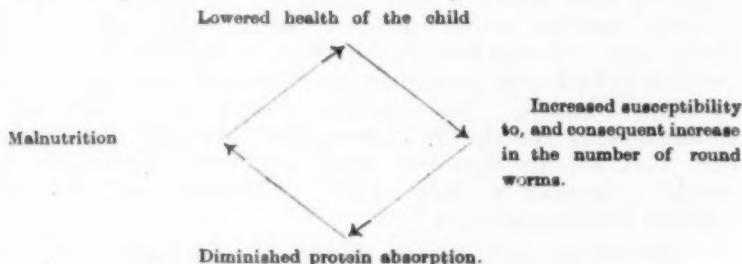
Besides the poor quality of the child's food we have another factor which is also responsible for this high incidence of malnutrition in Madras, viz., *Poverty*. As a result, the poor quality and the insufficient quantity of food are both responsible for malnutrition in Madras.

The question now arises—why should malnutrition be seen mostly among children ? The reasons are many ; first of all a

* Specially contributed to THE ANTHROPOLOGIST.

growing child requires proportionately more calories than an adult for his growth and play, and also for the increased metabolism of childhood. For example, an adult weighing about 120–130 lbs. requires approximately 2400–2600 calories *i.e.* 20 calories per pound of body weight, while a child aged, say 2 years weighing 25 lbs. requires 1000 calories, *i.e.* 40 calories per pound of body weight. Inadequate diet throws children off the balance much earlier and much more easily than it affects adults.

Another cause for the greater incidence of malnutrition among children is ascariasis. Children suffer from heavy round worm infection more often than adults. This is because of their unclean habits. Experiments conducted at the Nutrition Research Institute, Coonoor, have proved that the vitamin and protein absorption rate by the intestines is diminished considerably in the presence of round worms, and that this absorption is increased after treatment of the child for round worms. Round worms thus contribute towards the hypo-proteinæmia of malnutrition. Another fact of importance which has emerged recently is that the incidence of ascariasis depends on the general health of the child. When the general health of a child is lowered, the susceptibility of the child to round worm infection increases. It is well-known that *ascaris suis*, the round worm of pigs, is morphologically identical with *ascaris lumbricoides*, the round worm of man. Mutual interchange of hosts is normally not possible. But under certain conditions for *e.g.* a lowering of vitality in pigs, this interchange becomes possible. Likewise, the malnourished child is prone to round worm infection and this by reducing the absorption of proteins produces a greater degree of malnutrition, establishing thereby a vicious circle :



Infection is another factor which precipitates malnutrition in children. Upper respiratory catarrh, bronchitis, broncho-pneumonia, skin infections, otitis media are common complaints in children. Undernourished children are especially prone to these infections. The increase in metabolism associated with infection sets up yet another vicious circle :

Malnutrition → Infection → Increased metabolism → Malnutrition which ultimately kills the child.

Weaning of the child is the stage when malnutrition commonly manifests itself. This is because of the unsuitability of the solid food introduced. As a result diarrhoea sets in and this eventually leads to a state of undernourishment.

The well advanced cases are easy to diagnose and I shall deal with them later. It is the child in the early stage of the disease who presents difficulty. In order to spot such cases, a clinician should have a thorough knowledge of the normal healthy child. Obesity or over-weight in a child is not to be taken as an indication of good health. It may mean over-feeding. A healthy child does not cry often; he is playful; happy and contented; he has a smooth skin, gains steadily in weight and increases in height, and has bright, clear, sparkling eyes. In contrast to this, a badly fed child is small for his age, both the height and weight being below normal. He suffers often from minor ailments like skin affections, bronchitis etc. The skin is rough and dry. Night blindness, angular stomatitis and cheilosis, a smooth glazed tongue, keratomalacia and other evidence of vitamin deficiency may also be present. "A certain apathy, lack of 'pep', of enthusiasm for work and play is characteristic of the malnourished." It is therefore, essential that a careful examination of all children should be made

to detect their state of nutrition. When an early diagnosis of malnutrition is made, it is easy to prevent the condition from progressing. Delay in diagnosis only results in prolonged and needlessly expensive treatment, and may even mean loss of sight in both eyes, disfigurement or even death. I am of opinion that in Madras avitaminosis is probably the most important cause of blindness in childhood. Fortunately, however, if the eye changes are detected early and vitamin A promptly administered, the ocular manifestations disappear rapidly.

The advanced cases of malnutrition as seen in Madras can be divided into three broad clinical groups:—(1) The first group is wellknown as the "Nutritional oedema syndrome," or Malignant malnutrition;"

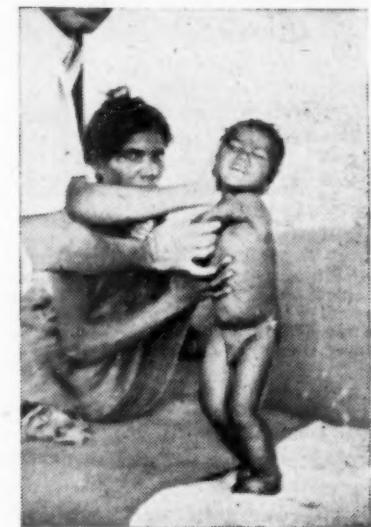


FIG. 1.—A typical case of "Nutritional oedema syndrome" showing oedema, ascites and "crazy pavement dermatosis" over the trunk and extremities.

in Africa it is called "Kwashiorkor." (Fig. 1). Children in this

group have œdema of the feet, legs, hands and sometimes of the scrotum, ascites, pallor due to an associated anaemia, diarrhoea and characteristic skin changes. The skin changes exhibit a mosaic pattern of alternating dark and light-coloured patches or as it is called "crazy pavement dermatosis". Liver enlargement may be another feature in these cases. Evidence of avitaminosis in the form of angular stomatitis and cheilosis, a smooth glazed tongue and eye changes may be present.

(2) In contrast to the above group of "swollen" children, children belonging to the second or marasmic group (*Fig. 2.*) are extremely marasmic and wasted, all bones and no flesh—in short "walking skeletons." Oedema is absent in this group. The children have a dry, wrinkled skin, which hangs in folds over the abdomen and extremities. Absence of subcutaneous fat; sunken eyes and cheeks and prominent bones of the face; shrivelled arms and legs which hang out like two sticks from the body; and cold extremities are other features which characterize this group. Most of them show evidence of vitamin deficiency. An associated infection or diarrhoea may be present. With their eyes screwed up because of the pain and photophobia resulting from the ocular manifestations of vitamin deficiency, these children present a sad picture of tragic misery. It is difficult to explain why a deficient diet should produce in one case, hypo-proteinæmia followed by œdema and ascites and in another muscle and tissue breakdown resulting in marasmus and wasting. If it is explained that the œdema of the first group masks the wasting of the second, then one would expect to see evidence of marasmus with the improvement in the general condition in nutritional œdema. But this happens only in a few cases.

A variant of the nutritional œdema syndrome is the type where œdema is the only evidence of malnutrition. (*Fig. 3.*) This type may be called the 'Famine œdema' group. The characteristic crazy pavement dermatosis and other features of nutritional œdema



FIG. 2.—Another manifestation of Malnutrition. A case belonging to the second or the Marasmic group. Note the extreme wasting of limbs, prominence of bones, absence of subcutaneous fat etc.

syndrome are absent. Diarrhoea may be present in a few cases. Evidence of avitaminosis is slight or absent.



FIG. 3.—A case belonging to the third or "Famine oedema" group described. Oedema is the only feature of the disease.

I had an opportunity of studying malnutrition cases in Barisal during the 1943 Bengal Famine. Over 300 cases were seen by me of which children formed quite a large proportion. In Bengal, the cases seen were mostly of the oedematous type with very few signs of avitaminosis i.e. they belonged to the 'Famine oedema' group described above. These cases responded dramatically to intravenous protein hydrolysates supplied by the All India Institute of Hygiene and Public Health, Calcutta. The cases seen in Bengal were very similar to cases seen in Germany and other European countries after the last war. The Bengal Famine being a sudden crisis in the lives of people used to a fairly good type of food, it may be postulated that these oedematous cases were due to a sudden lack of essential proteins in the food leading to hypo-proteinaemia. If this state of affairs were allowed to continue, these cases may have developed the full fledged nutritional oedema syndrome. Nutritional oedema syndrome is therefore, a manifestation of chronic malnutrition, whilst the famine oedema cases are due to early or acute starvation.

Opinions differ on the relation between pellagra and the nutritional oedema syndrome. Some clinicians feel that nutritional oedema cases met with among children is just a variant of the adult pellagra. They even call these cases "Infantile pellagra." They attribute the difference in the clinical features to the difference in age which in some way affects the reactivity of the skin. Nutritional oedema cases therefore, have the crazy-pavement type of dermatoses, while pellagra cases have a dermatitis of exposed parts, Casal's necklace etc. In Johannesburg the nutritional oedema syndrome cases of childhood develop into classical pellagra as the child grows older. In Uganda, however, such cases merge into the malignant malnutrition of adults, which is entirely different from pellagra. Pellagra is rare in Madras. Raman in 1940 recorded 25 cases of pellagra in Vishakapatnam, twelve of these being of the secondary type. He was able to

collect references to only 139 cases previously recorded in India. Lowe in 1931 reported a few cases in India. While pellagra is a rare disease in India, malnutrition among adults is however, met with quite often. I am of the opinion that the nutritional oedema syndrome as seen in India is entirely different from pellagra.

What is the solution to this problem of malnutrition in Madras ? Let us first of all consider weaning, which is a difficult stage in the life of the infant. The new diet of the child is not an adequate substitute for breast-milk. Among the cereals used in South India are rice, ragi, arrowroot, barley, sago, wheat and maize. Powdered banana is given in some parts of Travancore and Cochin. The protein content of these cereals is as follows : Rice—6·9 gm.% ; ragi—7·1 gm. % ; barley—11·5 gm. % ; wheat—11·0 gm.% ; Indian corn—13·6 gm. %. It will be seen that rice which forms the staple food of the South, is very poor in proteins. Its vitamin content is also low and the method of cooking it in Madras is faulty. It is not surprising therefore, that we see so many cases of malnutrition in South India and only a few cases in Northern India where wheat forms the main article of diet. Ragi and wheat are much better infant foods than rice, with no appreciable difference in price. The inclusion of animal proteins in the form of meat, fish or egg as early as possible is to be advocated. Many mothers are under the impression that such food will kill their child. In the remoter parts of Burma I noted a very repugnant practice among the mothers. They used to chew the food themselves and after masticating it thoroughly transfer it to the mouth of the child. It may be helpful but is thoroughly unhygienic !

The practice of continuing breast-feeding up to two or even three years is prevalent in Madras. Since teeth begin to erupt about the sixth month, prolongation of breast-feeding after about nine months has the danger of causing breast abscesses. It has also a deleterious effect on the general health of the mother. But from the point of view of the child it prevents malnutrition in infants of families who cannot afford to buy cow's milk. If necessary the infant's food may be supplemented with other food. Of course, the mother's diet in such cases should be sufficient both in quality and in quantity. Another doubtful advantage of prolonging breast-feeding is that it might reduce the number of births as there is a belief in the minds of some people that sex relations with a woman, who is breast-feeding her child is harmful. A lowered birth-rate means a lowered mortality rate and so advantageous, both to the parents and to the children.

I do not propose to deal at length in this article, with the treatment of malnutrition. Experience has shown that the vomiting and diarrhoea are often intractable. In this hospital we have tried with benefit, lactic acid milk, citrated milk, proprietary preparations like Eledon (Nestles) etc. To the very severe cases of

diarrhoea only whey, barley water or albumen water is given. When the diarrhoea cannot be controlled by diet or by other medicines, Tincture of opium is tried as a last resort. Blood transfusion given intravenously or as a marrow transfusion, is found to be very efficacious in the severe anaemias associated with malnutrition. Protein hydrolysates orally or parenterally is effective in counteracting the hypo-proteinæmia. Vitamins by mouth or as injections should be prescribed in all cases.

Malnutrition in children is thus a very serious problem in India and particularly so in Madras. It requires to be tackled with tact and force in any programme of Child Health and Infant Welfare. Sir Alexander Russell put the case very aptly and forcefully before the public, when he said,

"No preventive campaigns against malaria, against tuberculosis or against leprosy, no maternity relief or child welfare activities are likely to achieve any great success unless those responsible recognize the vital importance of this factor of defective nutrition and from the very start give it their most serious attention. Abundant supplies of quinine, and multiplication of tuberculosis hospitals, sanatoria, leprosy colonies and maternity and child welfare centres are no doubt desirable, if not essential, but none of these go to the root of the matter. The first essentials for the prevention of disease are a higher standard of health, a better physique and a greater power of resistance to infection. These can only be attained if the food of the people is such as will give all the physiological and nutritional requirements of the human frame."

I wish to thank Dr. C. Raghavachari, M.S., F.R.C.S., Superintendent, Stanley Hospital, Madras, for permission to publish the article and to incorporate photographs taken of patients from the hospital.

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Aureomycin and Chloromycetin in Chancroid

Chancroid ulcer in 2 cases treated with chloromycetin (250 mg. orally thrice a day for 3 days) and in one case treated orally with aureomycin (2000 mg. during 3 days) healed in 3 to 5 days. In one case the bubo needed aspiration on the 4th day but the aspirated fluid had lost its virulence.—(Br. Med. Jour., 10-3-'51, pp. 509-10).

RATIONALE FOR THE USE OF NICOTINIC ACID AND ITS AMIDE IN NON-PELLAGROUS DIARRHEA AND PSYCHONEUROSIS*

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Introduction.—At a meeting of the Central Society for Clinical Research held in Chicago on November 3, 1937 Spies, Cooper and Blackenhorn made the announcement that nicotinic acid and its amide had an extra-ordinary curative effect in human pellagra ; Elvehjem, Madden, Strong and Woolley found that a commercial preparation of nicotinic acid was very effective in curing canine black tongue. It was found that the urinary excretion of nicotinic acid was very low in the cases of pellagrous diarrhoea, and that by treatment with nicotinic acid the urinary excretion of nicotinic acid was raised.

With a view to studying the excretion of nicotinic acid in cases of non-pellagrous diarrhoea, observations were made on 30 cases of diarrhoea and 12 cases of psychoneuroses. Though the investigation covers a limited number of cases, it happens to be the largest number so far studied by any one under strictly controlled conditions.

The very few cases that have been reported in the literature relate to pellagrous diarrhoea. The cases that we studied had nothing in common with a classical pellagrin except for the common complaint of persistent diarrhoea.

Experimental technique.—Estimations of nicotinic acid in urine were carried out on 24 hour collections by the aniline cyano-gen-bromide method. Urine under normal conditions without any drug served as control. 50 mg. of nicotinic acid was then administered intramuscularly and the excretion estimated as before. The results are shown in the graphs (personal observation).

Observation and Results

Cases of diarrhoea.—Samples of urine from 30 cases of diarrhoea were examined on admission to the hospital and before nicotinic acid was administered to them ; they excreted 1.75 to 3.01 mg. of nicotinic acid per day, as against 4.5 to 11.9 mg. of nicotinic acid excreted by the healthy individuals. After these patients received intramuscularly 50 mg. of nicotinic acid, they excreted on an average 14.75 to 27 mg. the percentage excreted being 43.1% as against 64.6 % excreted by healthy individuals. (*vide Table I, next page*).

* Specially contributed to THE ANTISEPTIC.

TABLE I
Showing particulars of observations relating to the excretion of
Nicotinic acid, in 24 hours urine samples under normal
and test conditions—in cases of Diarrhoea.

1 Serial number	2 Name of patient	3 Normal excretion of nicotinic acid in mg.	4 Total urinary excretion of N.A., after the test I.M. injection of 50 mg. of nicotinic acid in mg.	5 Urinary excretion of "Extra" N.A., after the test injection of 50 mg. nicotinic acid in mg.: (Difference between cols. 3 and 4).	6 Percentage excretion of injected nicotinic acid after injection of 50 mg.
1	B.P.	2.1	28.506	26.406	52.8
2	N.A.	2.09	20.69	18.6	37.2
3	H.N.C.	1.83	22.6	20.77	41.5
4	J.D.	1.05	15.8	14.75	29.5
5	M.L.	2.12	21.9	19.78	39.6
6	S.P.	1.75	28.75	27.0	54.0
7	P.	3.01	26.65	23.64	47.3
8	N.G.H.	2.12	26.5	24.38	48.8
9	A.P.	1.9	20.6	18.7	37.4
10	S.N.	2.5	15.9	13.4	26.8
11	K.L.	2.3	21.8	19.5	39.0
12	V.N.	1.95	25.4	23.45	46.9
13	P.C.	2.01	26.65	24.64	49.3
14	R.	3.02	28.75	25.73	51.5
15	A.N.	1.5	27.8	26.3	52.6
16	S.N.	1.56	20.4	18.84	37.7
17	R.N.	2.1	21.35	19.25	38.5
18	M.	1.8	24.6	22.8	45.6
19	D.M.	1.85	27.65	25.8	51.6
20	B.N.	2.1	19.85	17.75	35.5
21	K.	2.8	16.9	14.1	28.2
22	S.B.	1.4	22.45	21.05	42.1
23	J.	2.5	21.9	19.4	38.8
24	G.D.	1.85	16.4	14.55	29.1
25	R.K.	3.1	27.9	24.8	49.6
26	D.	2.5	26.45	23.95	47.9
27	E.	2.8	22.84	20.04	40.1
28	J.P.	3.01	28.3	25.29	50.6
29	K.	2.4	25.9	23.5	47.0
30	D.B.	2.75	23.45	20.7	41.4
Range of variation from—		1.03 to 3.01	15.8 to 28.75	13.4 to 26.4	Average reduction is 43.1% of the injected material.

Cases of psychoneurosis.—Twelve cases of psychoneurosis were also examined. They excreted normally during their period of illness 1.85 to 2.3 mg. as against 4.5 to 11.9 mg. of nicotinic acid

excreted by men of their own age who were apparently healthy. After an injection of 50 mg. of nicotinic acid they excreted 45·9% of injected nicotinic acid against 64·6% by normal individuals. (*vide Table II below.*)

TABLE II

Showing particulars of observations relating to the excretion of Nicotinic acid in 24 hours' urine samples under normal and test conditions—in cases of Psychoneurosis.

1 Serial number	2 Name of patient	3 Normal excretion of nicotinic acid in mg.	4 Total excretion N.A., after a test I.M. injection of 50 mg. of nicotinic acid in mg.	5 Urinary excretion of "Extra" nicotinic acid after test injection in mg. (Difference between cols. 3 and 4)	6 Percentage excretion of injected nicotinic acid after injection of 50 mg.
1	R.Q.	2·15	27·6	25·45	50·9
2	B.K.	1·85	21·0	19·15	38·3
3	K.N.	2·3	26·65	24·35	48·7
4	S.K.	2·1	20·1	18·0	36·0
5	D.C.	1·6	19·9	18·3	36·6
6	K.R.	2·2	21·6	19·4	38·8
7	L.J.	2·02	22·4	20·38	40·8
8	G.	1·8	25·65	23·85	47·7
9	S.	1·4	27·1	25·7	51·4
10	K.L.	1·5	28·1	26·6	53·2
11	D.P.	2·5	24·5	22·0	44·0
12	N.	1·3	26·7	25·4	50·8
Range of variation from —		1·3 to 2·5	19·8 to 28·1	18·0 to 26·6	36·6 to 53·2

Summary of the results.—1. Average urinary excretion of nicotinic acid in normal healthy individuals on a mixed balanced diet is from 4·5 to 11·9 mg. in 24 hours urine sample. (*vide I.M.G., 1949, 84, 149.*)

2. The average percentage excretion of injected nicotinic acid after a test intramuscular injection of 50 mg. in healthy adults is 64·6% of the amount injected. (*vide I.M.G., 1949, 84, 149.*)

3. Average urinary excretion of nicotinic acid in 24 hours by patients suffering from diarrhoea ranges from 1·3 to 2·5 mg.

4. Average percentage excretion in cases of diarrhoea of the injected nicotinic acid (50 mg.) is 43·1% of the amount injected.

5. Normal urinary excretion of nicotinic acid in 24 hours in cases of psychoneurosis ranges from 1·85 mg. to 2·3 mg.

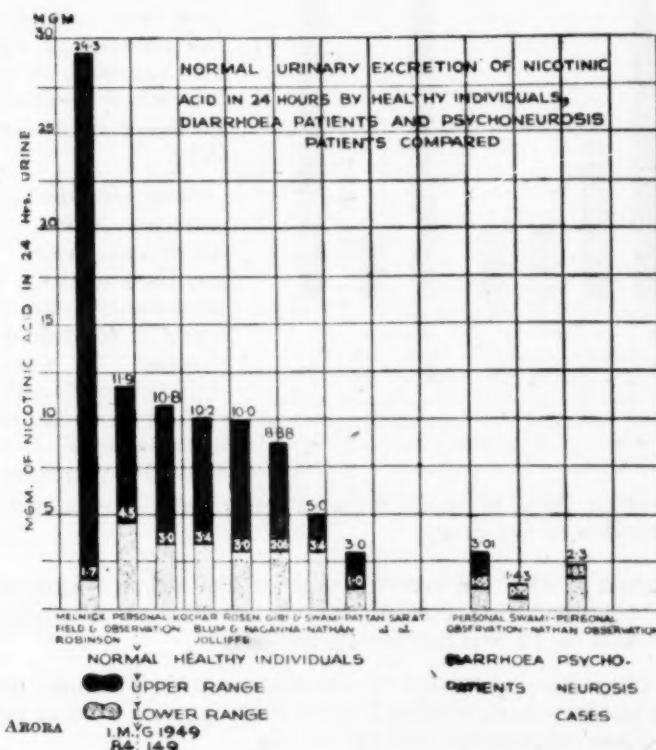
6. Average percentage excretion in cases of psychoneurosis of the injected nicotinic acid, is 45·9% of the amount injected.

7. (a) Diarrhoea cases and cases of psychoneurosis have got a low level of initial urinary nicotinic acid excretion as compared with the normal.

(b) The average percentage of excretion of injected nicotinic acid after intramuscular test injections is also low as compared with the normal.

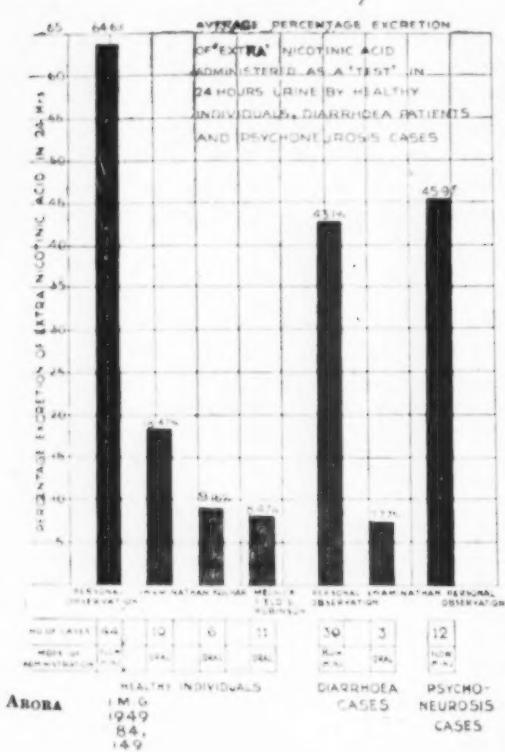
Discussion.—A glance at the charts will show that the initial excretory level of nicotinic acid in diarrhoea and in psychoneurosis is very low as compared with the normal. The same is true of the excretion of nicotinic acid, administered by way of a test.

The most plausible explanation for this would appear to be that diarrhoea and psychoneurosis patients suffer from a deficiency of nicotinic acid and hence retain more of the administered nicotinic acid and excrete less as compared with the healthy individuals who served as controls.



The excretory values of nicotinic acid in the experiments recorded above are higher. As has already been suggested (*I.M.G.*, July '43)

the ingestion of nicotinic acid leads to a change in its configuration due to its interference with absorption or the interaction of chemical substances in the gastric secretion ; Bicknell and Prescott consider that ingested nicotinic acid is largely excreted as trigonelline. The nicotinic acid excreted after slow intramuscular injections is not affected to the same extent as after a test dose.



A low excretion of nicotinic acid (3 mg. daily) occurs in pellagrins and it is almost the same as in non-pellagrous diarrhoea and psychoneurosis.

Unfortunately there are no comparable figures available for psychoneurosis cases to determine if the amount of nicotinic acid excreted is more or less when nicotinic acid is injected intramuscularly.

Some of the patients suffering from chronic diarrhoeas were given nicotinic acid by way of treatment, all other forms of treatment being stopped. It was found that these patients showed a marked and definite improvement in their clinical symptoms and

the excretory level of nicotinic acid was raised after a period of administration of the drug.

Summary.—1. An investigation of the urinary excretion of nicotinic acid has been carried out on 30 cases of non-pellagrous diarrhoea and on 12 psychoneurosis patients.

2. The initial excretion of nicotinic acid in 24 hours urine of diarrhoea patients ranges from 1.05 to 3.01 mg. and that in psychoneurosis cases range from 1.85 to 2.3 mg.

3. The average percentage of nicotinic acid excreted after an intramuscular injection of 50 mg. of nicotinic acid in diarrhoea patients is 43.1% and in psychoneurosis patients 45.9%.

4. It is suggested that nicotinic acid may be useful not only in pellagrous diarrhoea but in other chronic diarrhoeas and in psychoneurosis as well.

Acknowledgement.—My grateful thanks are due to Professor of B. B. Bhatia of Lucknow, under whom this work was started, to Dr. B. K. Malaviya for his technical help, to Dr. M. L. Sharma, Physician Irwin Hospital, New Delhi and to Dr. C. Chatterji Officer in-charge of Mental Hospital, Jaipur for cases and to the Dean of the Faculty of Medicine, Lucknow University for permission to use extracts from my thesis.

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Indications for Dicoumarol in Acute Myocardial Infarction

Anticoagulant therapy is of value in treating myocardial infarctions in so far as it reduces the incidence of thrombo-embolism and the number of deaths; in certain types of patients the risk may not be high even without anticoagulants. Russell and his co-workers studied 424 consecutive cases of acute myocardial infarction, admitted into the U. S. Marine Hospital and the Brooklyn Hospital, none of these had received anti-coagulant therapy. They were divided into 'good' and 'poor' risks. The latter comprised those who had previous myocardial infarction or who during their first day in hospital had one or more of the following signs and symptoms, viz., intractable pain, extreme degree, and/or persistence of shock, noticeable cardiac enlargement, gallop rhythm, congestive heart failure, auricular fibrillation or flutter, tachycardia of the ventricles, intraventricular block, diabetic acidosis etc. In the "poor" risk group (220 cases) 17 had thrombo-embolism and 98 of the 220 died. In the "good risk" group (204 cases) 2 had thrombo-embolism and only 5 of them died. Since anticoagulant therapy with dicoumarol itself carries a perceptible risk it should be reserved for patients whose prognosis is definitely considered unfavourable according to the criteria detailed.—(J. Am. Med. Assoc., 145, 390-392).

Permanency of Glutamic Acid Treatment

A follow-up study by Zimmerman and Burgemeister of the Columbia University's Department of Child Neurology, was made on 38 patients of defective intelligence of all grades treated by glutamic acid (an amino-acid resulting from the hydrolysis of proteins) for 6 months to one year. It was found that in a large number the improvement was maintained as measured by psychological tests, 2½ to 3 years after cessation of treatment. The amount of gain on initial treatment as judged by verbal tests was of greater value in determining the permanency of results than the duration of treatment. The reverse was true with performance tests.—Arch. Neurol. Psychiat., 1951, 65 ; 291-298. Abst. in Nutr. Abst. Rev., Oct. 1951, p. 493.

CIRRHOSIS OF THE LIVER*

(INFANTILE HEPATIC CIRRHOSIS)

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MALNUTRITION has a high index of itself in hepatic disease and experimental work in 1932 first showed the importance of diet in the genesis of hepatic fibrosis. Lack of choline or proteins containing methionine produces in animals cirrhosis analogous to human portal cirrhosis.

Choline and its related bases are lipotropes, and choline is an essential dietary constituent. The lipotropic action of proteins and amino-acids (casein—Channon and Wilkinson 1935; egg albumin, beef muscle protein, and edestin) has also recently been realised and this action is due to the amino-acid content (cystine, methionine). Methionine has a labile methyl group, which is responsible for the bio-synthesis of choline. Casein is lipotropic because of its high methionine content.

Alcoholic portal cirrhosis is in line today with alcoholic pellagra and beri-beri and Wernicke's encephalopathy.

I stressed in 1939 the importance of deficient and improper diet in the genesis of cirrhosis of the liver in children and the subsequent further observations support my contention.

Infantile hepatic cirrhosis.—DEFINITION:—Infantile hepatic cirrhosis is a disease which occurs in infancy and early childhood with a steady and painless enlargement of the liver and spleen. Irregular fever and gastro-intestinal disturbances (vomiting, diarrhoea, and constipation) are present. Ascites and jaundice set in later in the course of the disease and of the two, one may appear earlier than the other, or both may set in almost simultaneously.

Geographical distribution.—Western writers describe two forms of biliary cirrhosis, one in association with congenital obliteration of bile ducts and the other accompanying subacute necrosis of the liver. Rogers and Megaw (1942) offer no better clues; Vere Hodge (1936) has however, a more practical description of hepatic cirrhosis as seen in Indian children. Sir Philip Manson Bahr has given but a very brief consideration to this important subject.

Infantile hepatic cirrhosis occurs in India, Mexico, North China and possibly in Japan, where it should certainly be rarer as rice and fish form the national diet. The condition is common in Bengal, Bombay, Madras and Uttara Pradesh. The Mexican analogue of the disease is said to be characterised by diarrhoea, neurological signs and febrile bouts.

* Specially contributed to THE ANTISEPTIC.

Etiological families.—Sarma (1939, 1940, and 1941), and Krishna Rao (1941) agree that the majority of cases occur in vegetarian families; out of 100 cases studied in detail by the former 88 were from vegetarian and only 12 from non-vegetarian families.

The disease is clinically discernible after 7 months. Sarma (1939) and Chaudhuri (1944) noted the preponderance of the disease in the male children while Prabhu (1940) and Krishna Rao (1941) considered that both sexes were equally affected.

The disease is familial, as definitely observed by me in a few families. A number of children of the same parents or the children of two brothers or two sisters die from the disease.

A study of twins in relation to infantile hepatic cirrhosis was made by Prabhu (1940) and Krishna Rao (1941); the former states that twins may be simultaneously affected though not to the same extent; and the latter thinks that feeding with cow's milk is the crucial factor which decides the pathogenesis.

PATHOGENESIS:—Malaria and Kala-azar produce a different form of hepatic cirrhosis. Toxic drugs (carbon tetrachloride, arsenic, copper, phosphorus, manganese, atophan, sulphonamides, chloroform, chloral-hydras, santonin) are all known to damage the liver.

"The occurrence of biliary cirrhosis apart from obstruction or inflammatory changes in the bile ducts is improbable and the same argument would hold in infantile cirrhosis". (Menon, 1931).

Toxaemias of pregnancy were observed in some mothers whose children were later afflicted by cirrhosis of the liver. Asthma, migraine, gastric ulcer and diabetes occurred in some parents of such children. Whooping cough and typhoid fever also appeared to pave the way for hepatic cirrhosis.

Studies on the Rh factor have revealed that an Rh positive baby born to an Rh negative mother (generally the victim of toxæmia of pregnancy and an Rh positive father is particularly liable to develop hepatic cirrhosis.

A child with congenital syphilis may, like any other baby, become a victim to hepatic cirrhosis.

Diarrhoea (particularly during summer) appears to be the starting point—virus infections? Castor oil has been blamed as a cirrhotogenic agent; but in my opinion, this is possible only if the child is allergic to the oil.

A preponderance of carbohydrate, especially in the shape of cereals and starches together with spicy and needless adjuvants form the diet in vegetarian families, when a baby is weaned; and some babies who are thus fed, are very much on the same experimental level as animals in nutrition research laboratories.

Krishna Rao (1941) incriminated as causative agents, cow's milk diet and a *B. coli* invasion of the liver; and his conclusion

was based on fraternal twins, of whom the breastfed boy was spared and the twin sister reared on cow's milk died of cirrhosis. My own view is that cow's milk can be injurious only when given in excess, owing to the intolerance of the baby to a high fat diet in the absence of enough lipotropes.

PATHOLOGY:—Gibbons first described the pathology of infantile cirrhosis of the liver and concluded that it was biliary or hypertrophic cirrhosis. Rolleston and Mc-Nee described the condition as a form of biliary cirrhosis in young children in India. Menon (1931) described monolobular and pericellular fibrosis in infantile hepatic cirrhosis. Krishna Rao (1941) came to the conclusion that the cirrhosis is of the portal type (atrophic type of Lænnec).

A post mortem study made by me in 1944 yielded the following:—



FIG. 1.



FIG. 2.

Figures 1 and 2 (Liver: Naked eye appearance). Macroscopic appearance of the liver, showing granular surface, and on section islands of parenchyma enclosed by connective tissue.

Post-mortem, the body was intensely jaundiced and with a sanguinous discharge from the nostrils and the mouth. Abdomen was distended. When the abdomen was opened, the liver was seen intensely bile-stained and hard and very finely nodular. Only a small quantity of fluid could be tapped. The liver was cut with resistance and a portion was removed from the right lobe.

Under the microscope the capsule of the liver was found to be thickened in places. Surface was granular and bands of connective tissue ran into the substance of the liver from the depressed areas on the surface of the liver. The normal architecture of the liver

was lost. Small groups of liver cells of varying sizes, showing degenerative changes, separated by well-formed connective tissue were seen. Areas of regeneration consisting of pseudo-lobulation were also seen. Yellowish pigment particles were found in areas of degenerating and regenerating cells as demonstrated by fat stains. Biliary thrombi were present in the biliary canaliculi in places. The connective tissue was infiltrated with lymphocytes, a few polymorphs and an occasional eosinophil. The periportal fibrous tissue was also increased to some extent. A few central veins showed some thickening of their walls.

The ante-mortem condition of the boy was :—A male child 1½ years old; vegetarian; middle class; father asthmatic: Admitted for distended abdomen of six months' duration on 1-12-1944. The baby was breast-fed but supplemented with cow's milk.

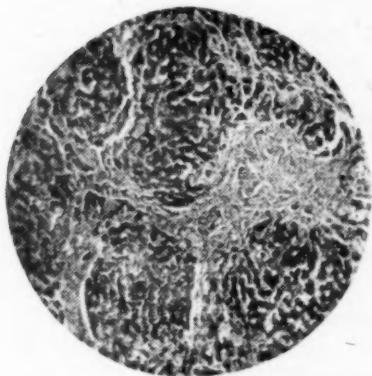


FIG. 3

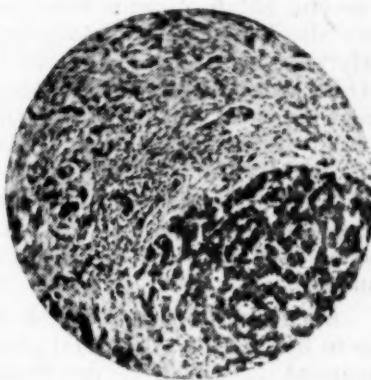


FIG. 4

FIG. 3.—Liver, microscopic study. Photomicrograph $\times 60$ showing isolated groups of parenchymal cells caught in the connective tissue strands.

FIG. 4.— $\times 270$. Small groups of liver cells with degenerative changes, and separated by connective tissue are seen. Regeneration and pseudo-lobulation are also seen. Pigment also visible in a few cells. Also noteworthy are biliary thrombi in bile canaliculi.

Clinical:—Liver hard and 3" below costal margin and spleen 1" below costal margin. No ascites or jaundice but para-umbilical vein was prominent.

30-12-1944 :—Slight icteric tinge seen in the sclerotic, slight diffuse oedema of the body present. *Urine:* No albumin. Benedict's qualitative solution reduced. Bile pigments present, but no bile salts. Urobilin subnormally present. Kahn tests of patient's and patient's father's bloods proved negative.

16-1-1945 :—Admitted into the Stanley Hospital with cholangitis and intense jaundice. Slight ascites present. A soft systolic

murmur audible at the apex. Patient died on 18-1-1945. This fits in with the valued description of subacute toxic cirrhosis, elaborated by M. V. R. Rao (1935).

Discussion.—*Heredity*:—The disease is common in vegetarian families. It is heredo-familial, according to some writers. Observations on twins have been referred to already. Further observations on twins are welcome including the following:—

A boy, vegetarian aged 11 years came under my care for chronic interstitial nephritis in January 1945. His twin-brother died at the age of 1½ years of infantile hepatic cirrhosis. The twins were fed at the mother's breast and on cow's milk. An elder brother to these twins died of chronic interstitial nephritis aged 20 years. Paternal uncle asthmatic; paternal grandmother and her mother victims of migraine; Kahn and Wassermann tests of patients and their parents negative. This is the story of one batch. A second batch of twins came under my care; they were boys who were also breast-fed and supplemented with cow's milk. One died early at 1 year and the other died at 1½ years, of cirrhosis of the liver. A third batch of twins, a boy and a girl, each 8 months' old, came under my care. The mother of these children had hyperemesis gravidae during pregnancy. The girl developed hepatic cirrhosis and died by the end of 9th month. Her twin brother was seen with atopic eczema at the 9th month. Both were breast fed by the mother and also had cow's milk. The parts played by nature and nurture are not therefore, yet understood thoroughly by the clinician.

***Endocrine aspects*:**—Mild hypoadrenia (congenitally present due to hypoplasia of adrenal glands and acquired after a chronic infectious disease, toxic condition, or malnutrition) exhibits symptoms like nausea, abdominal pain and diarrhoea alternating with constipation. Gordon (1942) states that in mild chronic hypoadrenia there is a marked susceptibility to infections, especially of the upper respiratory tract and to allergic disorders such as asthma, hay fever, rhinitis, cough and food intolerance, and further disturbances of carbohydrate metabolism (low fasting blood-sugar and increased sugar-tolerance) are also present.

There is a remarkable similarity in the low blood-sugar level and other symptoms of mild chronic hypoadrenia and those of infantile hepatic cirrhosis. Cirrhosis of the liver is detected between the sixth month and the third year in infants, and there is a tendency to spontaneous retrogression of the disease by the end of the 3rd year. The switch-over period of the infant's life i.e. from shortly after birth to the end of the 3rd year is noteworthy, because at that time a new and permanent adrenal cortex is built up in place of the old cortex. During this switch-over period, malnutrition, including deficiency of vitamin C which is presumably essential for the normal functioning of the adrenal cortex, probably

plays an important role in determining the derangement in adreno-cortical function. Verzar considers a deficiency of the cortical function to be responsible for the deficient fat-absorption from the intestine.

Infections and toxins :—Krishna Rao isolated *B. coli communis* from cultures of scrapings from the liver, after death.

Summer diarrhoeas :—These (virus infections?) appear to be the starting points in many children dying later of cirrhosis.

Maternal toxæmias of pregnancy appear to have an important bearing. Infection and toxic action may also produce a mild chronic hypoadrenia as already elaborated by me.

Food factors :—In 1939 I stressed the intolerance to the fat in cow's milk, as an important cause of cirrhosis and the following post-mortem study shows the bearing of malnutrition in the genesis of the disease. An ill-nourished child (the usual type of poor children getting into the hospital in Madras) female, 5 years old, non-vegetarian, was admitted into the Stanley Hospital, for swelling of the abdomen and feet of 2 months' duration. She had whooping cough 2 months prior to the swelling. Ill-nourished with vascularised corneaæ and xerosed conjunctivæ. Skin dry and scaly as in pellagra. Angular stomatitis present. Ascites present. Liver $\frac{1}{2}$ " below costal margin and spleen palpable. Veins prominent over anterior abdominal wall.

Heart: nil particular. *Lungs*: a few basal rales heard. *Wassermann* test of mother's blood negative. *Urine* of patient: no sugar or albumin.



FIG. 5

FIG. 5.—Liver. Photomicrograph of liver. $\times 60$: Showing fatty degeneration and increase in periportal connective tissue.



FIG. 6

FIG. 6.— $\times 270$. Showing intense fatty change.

Serum : *Van-den-Bergh* : direct and biphasic positive.

Post-mortem : a portion each of the left lobe of the liver and spleen was removed. *Liver* : microscopic section. (*vide Fig. 5 and 6 page 453*).

Microscopic study :—In the liver, fatty degeneration involving all the zones and almost all the cells seen. Slight increase in the periportal connective tissue with lymphocytic infiltration. Chronic venous congestion seen in the spleen.

Cow's milk given to infants without dilution and modification is not ideal by virtue of its high content of fat which as a rule is not tolerated. To overcome this defect it has to be diluted with water, and the carbohydrate content is made up with sugar. The proteins and valuable amino-acids suffer severe dilution and are not in any way compensated for; and this factor should have an important bearing in the production of cirrhosis. Himsworth and Glynn have stressed the protective value of proteins of high biological value in trophopathic necrosis of liver.

The clinical condition of infantile hepatic cirrhosis appears to include more than one variety, as is the case with migraine, asthma, or atopic dermatitis. Cases arising mainly from dietary errors might show *post-mortem*, the portal type of hepatic cirrhosis, while those in whom toxic or infective elements predominate might exhibit *post-mortem*, the biliary type of hepatic cirrhosis. I consider that an allergic basis is common to all the types. Such clinical types do exist; and in one group of cases, jaundice is terminal and appears later than ascites; while in another, jaundice sets in earlier than ascites; the former group conforms to the classical description of portal cirrhosis while the latter resembles the orthodox version of biliary cirrhosis.

Allergy :—Allergy denotes certain peculiar reactions. From one to ten per cent of human beings are allergic. Allergy is a clinical concept as opposed to anaphylaxis which is the analogous condition in animals. It is inherited from parents, and may be against various substances. Its duration in the young is long. The allergic reaction (first or repeated) is due to allergins of an un-understood immunological nature provoked by allergens (protein or non-protein). A sensitizing agent and time-interval are not always essential. The sensitivity is highly developed in some tissues and entirely absent in others. The reactions are mainly in the skin, and in the respiratory and gastro-intestinal tissues.

Infantile hepatic cirrhosis is observed to be familial, seventy per cent show an allergic disturbance in the family, generally in the parents; it is more often unilateral (in one parent) than bilateral (in both parents).

Incidence of pertussis, typhoid, gastro-enteritis, and atypical diarrhoea as also the frequent occurrence of upper respiratory upsets

require close study from the view point of non-bacterial and bacterial allergy. Cyclic diarrhoea is in my opinion, not only based on allergy but also a potent forerunner of hepatic cirrhosis.

The Schwartzman phenomenon characterised by haemorrhagic necrosis at the prepared area, can occur also in the liver, kidneys, stomach, and other organs not only of animals but also of men. The causative factors may be bacteria or the viruses. The relationship of Arthus phenomenon to Schwartzman phenomenon is an established fact. The pathological basis of allergy consists of smooth muscle spasm and increased capillary permeability.

The respiratory digestive linings are entodermal in origin and the two systems are controlled by a common vago-sympathetic nervous balance. An allergic explosion like asthma in the respiratory tract is so overt as to be appreciated even by the patient. A similar occurrence, probably latent in the liver, seems to manifest itself as an integral part of gastro-intestinal hypersensitivity.

The following is the hypothesis put forward by me to explain the pathology of infantile hepatic cirrhosis. The basic element is probably an allergic diathesis. The disease being peculiar to children is due to the switch-over period of the adrenal cortex rendering the liver vulnerable to cirrhosis. Allergy may be specially to the ingested products.

Intolerance to dietetic agents, excess of fat in cow's milk; insufficiency in the diet (especially the protective proteins or vitamin C or anti-cirrhosis factor from the B complex, choline); a toxic factor from the bowel; and an infective element (virus?); one or more of these appear by continued action to produce infantile hepatic cirrhosis ultimately.

Clinically recognised cirrhosis of the liver is a final manifestation which has had its existence in the early stages without overt signs and symptoms. Looking at the end result of fibrosis of the lung or the kidney, it is not always that the clinician is able to trace the exact march of events to the results. *Cirrhosis of the liver is the final product, the story of whose previous scenes*



FIG. 7.—(Case No. 48: 1940; vide Antiseptic, January-April, 1946).
A male child 2½ years—advancing cirrhosis of liver (19-1-1940)—portal type.

of pathology is as baffling as it is enchanting.

The clinical picture.—The disease begins insidiously. Cirrhosis in a child is sometimes diagnosed in the course of a routine examination or investigation of an irregular fever, or some form of digestive disturbance. The early stages may be febrile or afebrile. Cases take a rapid (acute and subacute) or a slow (chronic) course.



FIG. 8

FIG. 8.—(Case No. 48: 1940; *vids Antiseptic, January-April, 1946*).
A male child 2½ years—advancing cirrhosis of liver (11-2-1940)—portal type.
FIG. 9.—A female child 10 months. Admitted 22-1-1941. Discharged in cholæmia on 29-1-41 (Case No. 63 of 1941 *vids Antiseptic, January-April, 1946*).
Cirrhosis liver (biliary).



FIG. 9

The early stage:—The hitherto playful and attentive child becomes dull and apathetic and prefers to lie down on the cold bare ground. An earthy complexion, a falling of hair from the scalp, sticky eyelids, commencing emaciation, wasting of the calf muscles, slight anaemia and digestive disturbances like anorexia, vomiting, constipation, bloating of the abdomen etc., slowly make their appearance. There is generally a low fever and a few respiratory symptoms like cough and occasional bronchial (asthma-like) spasm.

The abdomen is generally protuberant due to intestinal distension. The liver is generally enlarged, soft, and painless. Spleen may or may not be enlarged. Examination of the chest reveals a few rales particularly over the right base, with weakened heart sounds. The tendon jerks are brisk, if not exaggerated.

Examination of the urine, motion, blood and sputum may show nothing definitely abnormal. The urine on drying leaves behind a whitish deposit.

The intermediate stage:—The child at this stage has a liver up to the umbilicus which feels harder than before. The spleen may

become palpable. In the strictly *biliary* type of cirrhosis, a light tinge of jaundice, intermittent pyrexia and a characteristic cachexia start now. Either constipation or diarrhoea is present. The motion had lost its normal hue and odour; it generally assumes a whitish appearance, and has a foul smell. Van-den-Bergh reaction of blood is direct or delayed positive. Urine is scanty, is acid to litmus and generally shows a trace of albumin with urobilin in excess. In the strictly *portal* type of cirrhosis, ascites is early in its onset and jaundice appears much later in the course of the disease.

The third or advanced stage :—This is characterised by the presence of both jaundice and ascites; and is the terminal stage in fatal cases.

The liver is noticed to shrink as ascites develops; but I failed to observe hepatic shrinkage in every case with ascites. Portal obstruction due to a shrinkage of the liver alone, cannot be held responsible for the development of ascites. There seem to be other factors also, like toxic action and allergy. "Ascites in cirrhosis of the liver may be due to hypoproteinæmia as well as to portal obstruction. A diminution has been found to occur in such cases by plasma transfusions and a high protein diet, which have no effect on portal pressure."

In cases where the disease starts after a diarrhoea (generally in summer) there is a marked preponderance in the enlargement of the right lobe of the liver; and the left lobe of the liver is found more enlarged in cases starting with chronic constipation. In all cases at this stage the spleen is definitely enlarged, 1 to 2 inches below the costal margin. It is my impression that children in whom the disease started with chronic constipation showed splenomegaly earlier in the course of the disease than in others.

In this stage deepening jaundice, ascites, marked and continuous pyrexia, anaemia and a haemorrhagic tendency are present. Micturition is scanty. Dropsy of the lower extremities appears in extreme cases. Here again, toxic damage to the capillary endothelium and myocardial insufficiency are added to pressure on renal veins within the abdomen, to account for the dropsy. Distention of the superficial veins of the abdomen are very characteristic now.

There is now, marked respiratory distress which appears to be due not only to pressure of the ascitic fluid but also to the damage to the lungs and the heart which share in the common intoxication.

The right supraclavicular fossa is found tender in some children with palpable lymph nodes also; and this point was stressed by Sarma (1940).

Urine is scanty and high-coloured, and shows bile salts and bile pigments. *B. coli* may also be isolated from the urine. Sputum does not show *B. tuberculosis*. Blood examination reveals generally a secondary anaemia. Van-den-Bergh reaction is direct, immediate positive. Fragility of red cells is normal. The Kahn

and Wassermann reactions of the child's blood and the parent's blood are negative. Motion is whitish in colour with a foul odour. In a few cases thread or round worm ova are seen. The ascitic fluid is a transudate.

The long bones appear thinned out. There is clubbing of finger and toe nails. In a few a downy growth of hair over the spine is evident. The skeletal muscles atrophy, particularly the calf muscles; gynaecomastia has also been observed.

At this stage susceptibility to epithelial infectious increases. Chronic rhinitis, chronic otitis and a chronically infected condition of the throat, adenoids, and tonsils frequently co-exist.

X-ray study of the chest and bones and electrocardiographic tracings of a few children were done by me in 1939. *X-rays of the chest*: The general findings are marked hilar shadows, encroachment of right cardio-phrenic angle, and shadows suggestive of involvement of the right supraclavicular glands. *E.C.G.* in one case showed tendency to flutter. *X-rays of wrist* :—An arrest of growth, slight rarefaction of bone, and irregular epiphyseal lines are noteworthy. A few scorings are seen. With growth, similarity to renal and coeliac rickets is present.

The Takata Ara reaction in a few cases is positive (Pai 1941).

Course of the disease.—An acute case lived for only 2 months. Some children pull on for two or three years and then get over the disease or are carried away with a complicating illness or a recurring hepatitis with jaundice.

DIAGNOSIS:—The painless enlargement of the liver, pyrexia, earthy complexion, constipation, increasing icterus, ascites with splenomegaly are all salient features.

In studying pyrexial attacks, malaria, kala-azar, blood diseases, tuberculous peritonitis, hepatic tuberculosis, influenza and typhoid fever are to be remembered. The anterior margin of the liver has a characteristic wavy margin in this condition with lobal preponderance. In splenic anaemia splenomegaly starts early and dominates with haematemesis. Splenic anaemia in infants has a mononucleosis associated with rickets and is benign. Familial acholuric jaundice has increased fragility of reds (spherocytes), absence of bile in the urine and presence of urobilin in large quantity.

Gaucher's disease, Niemann-Pick's disease, Hand-Schuller-Christian syndrome, Von Gierke's disease, and blood dyscrasias are also possible sources of error. Rickets and conditions where jaundice is present (yellow fever, Weil's disease, congenital biliary cirrhosis, and infective hepatitis) should also be eliminated. The enlargement of liver in heart failure, fatty and amyloid degeneration, tumours and cysts are easy of identification. Ptosis of liver and benign enlargement of liver after a bout of diarrhoea or dysentery or during incubation of the eruptive fevers (particularly in pertussis) and lastly in persistent helminthiasis and chronic intestinal indigestion are to be remembered.

Up to 2 years of age the liver is palpable at varying levels below the costal margin.

PROGNOSIS :—Generally 1 in 5 has a chance of recovery; nutritionally arising cases do better. B-complex and protein hydrolysate are very useful. In my experience, methionine has justified its usefulness as a powerful agent. A few children given up as almost hopeless have had a slow and sustained progress with methionine orally and vitamin B complex (choline included) by injection. For the poor patient in the hospital, white of egg (albumin) orally and extract of liver (crude) by injection have done much to hearten the work in cirrhosis of the liver.

TREATMENT :—Preventive treatment starts with attention to the pregnant mother who is provided with a balanced diet and abundant supplies of vitamins and minerals. A liberal quantity of milk and fresh fruit should be allowed. Toxæmias of pregnancy should be promptly attended to.

Coming to the infants, the things requiring prompt and active consideration are : (1) Constipation or diarrhoea ; (2) prolonged use of castor oil, chloroform, chloral hydras, sulphonamides etc. in paediatric therapy ; (3) pertussis, diphtheria, typhoid fever, dysenteries, upper respiratory infections, sore throats including tonsillitis, small-pox, measles, helminthiasis etc.

Mother's milk is ideal for the baby and therefore, breast-feeding should be strongly encouraged, as it is the law of Nature. When proprietary foods must be used, a half-cream dried milk is to be preferred to the sweetened condensed milk. During the third quarter of the infant's life, weaning is attempted and great care is then required in the choice of the right kind of foods and also in ensuring good quality protein (egg white) and a liberal supply of vitamins, particularly vitamins C and B factors. The rationale and efficaciousness of treatment of cirrhosis with vitamin C has been supported by Rao (1940).

Prompt detection and early treatment of cases are important. Curative treatment includes hygiene, diet, specific and special lines of treatment.

Recent suggestions in dietetic management are: (1) Stopping fat ; (2) allowing good quality proteins ; (3) the use of lipotropes like choline and methionine. I am quite satisfied with the utility of B-complex and methionine. White of egg is ideal in the diet. Butter-milk, fruit juices, congee of parboiled rice and derivatives of whole yeast are also advised. Multi-vitamin concentrate preparations are used orally, and vitamin B₁₂ parenterally.

Extract of suprarenal cortex and vitamin C given regularly appear to be of great therapeutic value.

Symptomatic treatment of fever, cough, helminthiasis, insomnia, constipation, diarrhoea and anaemia is known as the usual routine. Haemorrhagic tendency merits the use of vitamins K and C. Gene-

ralised dropsy and ascites would need the use of vitamin B-complex by injection and a restriction of the fluid intake. Ascites would require diuretics including the mercurial injectables. Tapping is ideal if the fluid can be transfused into the vein of the same patient. Jaundice needs vitamins C and K calcium, as also salicylates orally. The use of *B. coli* vaccines is of no value.

Some of the children who have recovered from cirrhosis have developed asthma (allergic). Otherwise they appear healthy but for a hard enlargement of liver and spleen varying only in size. I have in my follow-up of cirrhosis, recovered children: a girl who is now herself the mother of three children; a college student (a boy) subject to attacks of migraine; and another, a boy studying in a High School. Many others among the recovered have come to me with atopic eczema, urticaria, cyclic vomiting, paroxysmal rhinorrhœa and recurrent sinusitis.

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FIG. 10.—A girl: Skin eczematous (marked) and liver enlarged (marked) after recovery from cirrhosis. Asthmatic attacks present.



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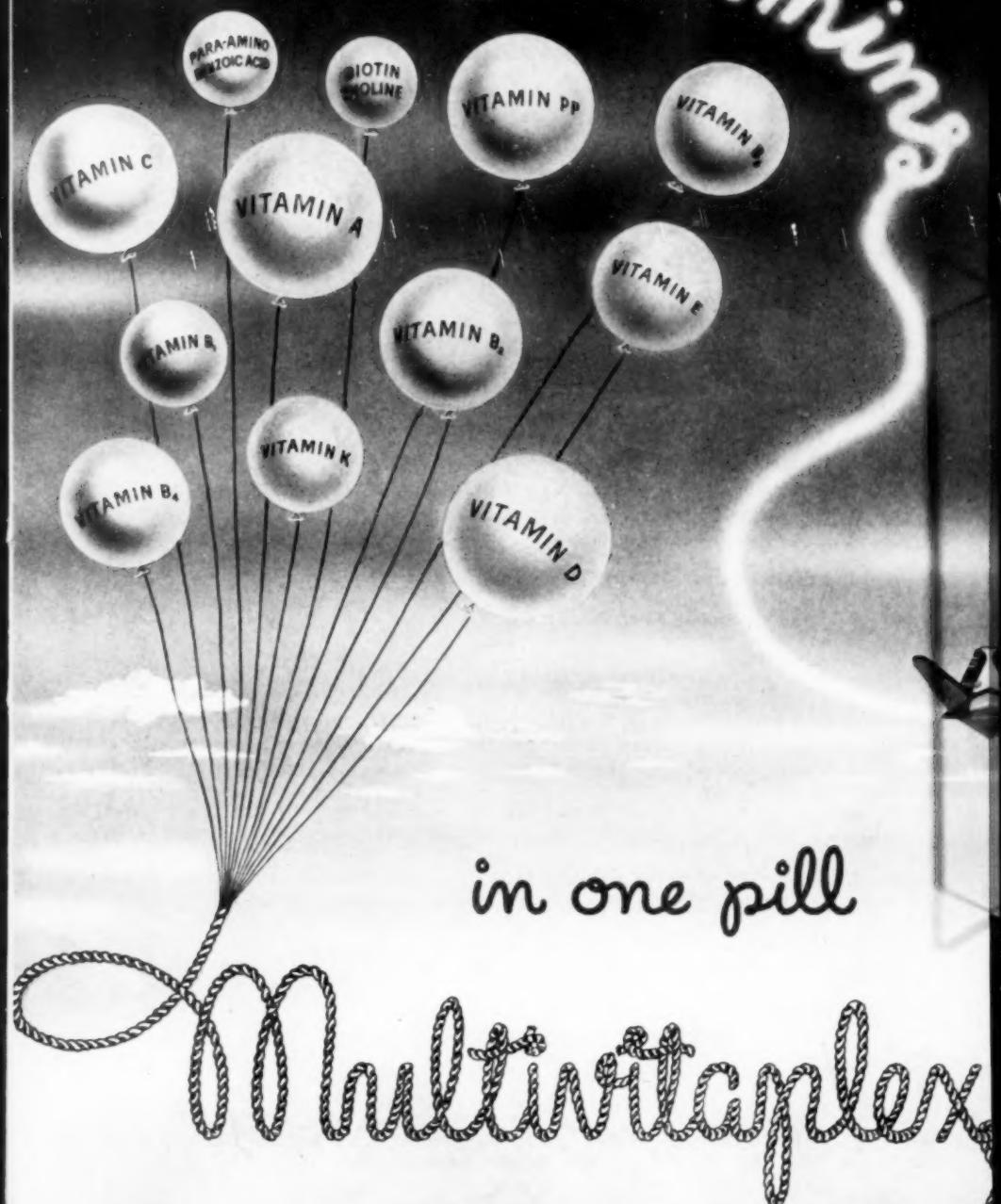
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SULPHONES IN LEPROSY*

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(3) Diasulphone (Pasteur Laboratories).	P:P'-diamino diphenyl sulphone,
(4) Promin (Parke Davis & Co.).	N:N'-di-dextro sodium sulphonate.
(5) Diasone (Abbot Laboratories).	Disodium - formaldehyde - sulphoxy-
(6) Diamidin (Parke Davis & Co.).	late-diamino-diphenyl-sulphone.
(7) Sulphetrone (Burroughs Wellcome & Co.).	Tetra sodium-phenyl-propylamino-
(8) Novotrone (Bengal Chemical and Pharmaceutical Works Ltd.)	diphenyl sulphone tetra sulphonate.
(9) Promacetin (Parke Davis & Co.)	Sodium 4:4' diamino-diphenyl-sul-
(10) Promizole (Parke Davis & Co.)	phone 2-acetyl-sulphonamide.
	2:4-diamino-5-thiazolyl-phenyl sul-
	phone

Dose and Mode of Administration

Diamino Diphenyl Sulphone (D.D.S. or D.D.P.S.)

D.D.S. was tried in the Government Lady Willingdon Leprosy Sanatorium at Tirumani, near Chingleput, (Madras) and found unsuitable for oral administration in mass treatment of leprosy, as the margin between a therapeutically effective dose and a toxic one was very narrow.

D.D.S. is not soluble in water and for parenteral use it has to be dissolved in groundnut or cocoanut oil and this has a tendency to depot formation. Moreover, the injections are painful, and because of the oily base they are not readily absorbed. The maximum average adult dose by mouth is 100 mg. per day for 6 days in a week. The patients selected should be in good health and be in a

* Paper read at the Anniversary celebrations of the Porbandar Branch of the Indian Medical Association on the 22nd March 1951.

position to take a sufficiently good nourishing diet. Even this low dosage of D.D.S. is slightly more toxic than sulphetrone; as there is a fall in R.B.C. and Hb., iron and yeast should be given side by side with D.D.S.

The Third All-India Leprosy Workers' Conference held at Madras in October 1950 recommended that great caution should be exercised in the administration of this drug and that the average oral dose should not exceed a total of 1 g. per week and the daily dose not more than 200 mg.

Lowe tried D.D.S. extensively in Nigeria, using even much higher doses than we are using in India and reported very favourable results with it. He has used D.D.S. in preference to and instead of *hydnocarpus* oil. His results have not however, been corroborated by workers in India.

Promin :—It is too toxic to be given by mouth and is available in two strengths:—watery solutions containing 2 g. in 5 c.c. and 5 g. in $12\frac{1}{2}$ c.c., both to be administered intravenously. Injections are to be given daily for 6 days with rest on the 7th day. Indian patients do not tolerate the maximum dosage of 5 g. but tolerate up to 4 g. Promin causes a needlessly high concentration in blood. It is also toxic; hence, its use is not advocated.

Diasone and diamidin :—They are given by mouth. Diasone is available in capsules or as tablets and Diamidin as tablets, each containing 0·3 g. Starting with 1 tablet of diasone three times a day the dose is *gradually* increased to about a total of 6 tablets *i.e.*, 2 g. a day. This drug is given for 6 days in a week with rest on the 7th day. After treatment for one month; rest is given for one week. Indian patients cannot tolerate 6 tablets per day. The maximum dosage they do tolerate is only 4 or 5 tablets per day. With this treatment, the blood should be examined every month for total R.B.C. and Hb.

Promacetin in a 3% solution has been used for injection at Carville. Not being available in India it has not been tried in any leprosarium in our country.

Promizole is used in the form of tablets each containing 0·5 g. It has been tried at Carville. It is a very costly drug. It is not available in India and therefore has not been tried.

Sulphetrone is available in the form of tablets and granules. Each tablet contains $\frac{1}{2}$ g. Starting with 3 tablets a day, (one tablet t.d.s.) it is continued for 6 days in a week with rest on the 7th day till a maximum of 12 tablets is reached. After 2 months rest is allowed for a week or two.

A 50 % aqueous solution of sulphetrone administered parenterally is a cheap, safe and effective sulphone preparation and leprologists in India, are all unanimous in the opinion that this method of

treatment is simple and effective. The dose is $\frac{1}{2}$ c.c. to 4 c.c. Injections are given intramuscularly twice a week. The results are very good and the cost of treatment by injection is only $\frac{1}{10}$ th of the cost of oral treatment and works out to two annas per injection. It is effective, relatively non-toxic and supplementary treatment with iron and yeast as required in the case of D.D.S. is not necessary. This treatment can be carried out in remote villages (as leprosy is largely a rural disease) because its administration is so simple and laboratory examinations are unnecessary. Considering all these factors, *50% aqueous solution of sulphetrone administered parenterally is the sulphone preparation of choice, as it answers nearly all the basic requirements of an ideal sulphone.*

Sulphone drugs penetrate rapidly into all the tissues. They are found in the skin, saliva, sweat and milk in the same concentration as in the blood. After administration, they are excreted in urine.

Type of Cases Suitable for Sulphone Therapy

Sulphone therapy is the treatment of choice in all lepromatous cases. The indications for sulphone therapy in tuberculoid leprosy are not altogether clear-cut, thus for instance, the thick, indolent, slowly spreading tuberculoid lesion does not readily respond to sulphone therapy. The tuberculoid conditions in which this therapy appears to be particularly efficient are the most active, slightly scaly, slightly oedematous lesions particularly of the face with no tendency to show areas of residual hypopigmentation. The improvement in these lesions is frequently striking. In view of the fact that sulphones have no effect on the hypopigmentation of neural leprosy or on the lepræ bacilli (*M. lepræ*) they are not considered likely to be of avail in simple macular (maculo-anæsthetic) and neuro-anæsthetic leprosy.

Mode of action of sulphones.—It is well known that all sulphones, (whether it is promin, diason, sulphetrone or the parent substance D.D.S.) have the property of causing *M. lepræ* to break up into granules. It is possible that sulphones so alter the environment of the *M. lepræ* that the tissues do not offer favourable conditions for their growth and multiplication. Under these adverse conditions, the bacilli more readily assume the granular form. The significance of these granules has not yet been determined but they appear to be found wherever the environment is unfavourable to the multiplication of *M. lepræ*. It is probable that sulphones have a strong regressive action on leprous lesions and so the fragmentation, granulation and ultimate disappearance of the bacilli are the results of the subsidence of those lesions.

Sulphones are not chemotherapeutic drugs because according to Ehrlich, they are substances which unite with and destroy only the parasitic agent of the disease without in any way injuring the cells of the body. The exact mode of action of sulphone drugs in leprosy is not still known to us.

Toxicity of the Sulphone drugs.—Experience has shown that marked toxic effects and complications are very rare, provided the treatment is started with a small initial dose and then gradually increased according to the tolerance of the patient. Complicated laboratory examinations at intervals, are not needed for regulating the treatment. All that will be needed is a simple periodical blood examination, to estimate the haemoglobin content. Minor toxic effects such as nausea, giddiness and weakness are often present in the beginning but disappear as the treatment progresses. Other side-effects observed are :—A dry feeling in the mouth, urethra and rarely in the anus, frequent but difficult and scanty urination, a burning sensation in the urethra, haematuria, swelling of the face and hands, multiple lymphadenitis, erythematous cutaneous lumps, acute lepra-reaction and anaemia.

The anaemia not being of a serious nature promptly responds to treatment with iron etc. The anaemia is seen particularly in the beginning of the treatment and as the treatment progresses, the blood picture improves and returns to its initial level ; it may even show improvement. If the dose of these drugs is properly regulated, the fear of toxicity need not stand in the way of their wider use, in the treatment of both in-patients in leprosy institutions and also of outpatients.

The Government of Saurashtra opened on 29th Nov. 1950 an out-patient Leprosy Treatment Clinic in the old Harijanwas, Porbandar and I have been in sole charge of it. At present, about a dozen lepromatous patients are attending this clinic and I have been treating them with a 50% aqueous solution parenterally. Following the technique of my revered teacher, Dr. Dharmendra of the Tropical School of Medicine, Calcutta, I started treatment of these cases with an initial dose of $\frac{1}{2}$ c.c. of sulphetrone solution and gradually increased it up to 4 c.c. noting carefully the tolerance of the patient to the drug at every step. I have not so far met with any serious toxic symptoms or complications in any of these cases.

Results of Treatment

Clinical improvement.—In the lepromatous type, the clinical improvement obtained by the use of these drugs is definitely superior to that achieved with hydnocarpus oil.

The action of sulphetrone is : (1) First to arrest further progress of the disease and (2) then make the disease retrogress steadily but surely. Within a few weeks of treatment, the patients begin to feel a sense of well-being and lightness. In due time, the whole appearance of the patient and his outlook on life are greatly altered and in place of the mask-like expressionless face, he comes to possess a face with a clearer expression and brighter features and instead of feeling, a sense of frustration, he is buoyed up by hope ; this makes a tremendous difference to the general health, which improves considerably in most cases.

Besides the healing of chronic leprous ulcers and leprous conditions of the eye, nose and throat, a subsidence of nodules and of the thick infiltrated patches, noticeable control of febrile and eye reactions and an improvement in bone-pains, are also found to occur.

Bacteriological improvement.—Bacteriological improvement is however, slow and it takes a long time (on the average 3 to 4 years) for a patient to become bacteriologically negative. Still, there is a definite bacteriological improvement as judged by a reduction in the number of bacilli in the smears and by the morphological changes observed in the leprosy bacilli in the tissues of patients under treatment with these drugs. Bacteriological improvement is evident only after treatment for about a year. It may be noted here that nasal smears become negative early in the course of treatment even when smears from other parts of the body show a moderate number of bacilli.

Conclusion.—In the present state of our knowledge, sulphones are the best drugs to use in the treatment of leprosy, particularly of the lepromatous type.

Sulphonamides, penicillin and streptomycin are of no use in leprosy unless there is some other coincident condition justifying their use. Pot. iodide should, on no account, be prescribed for a case of leprosy.

Acknowledgement.—I am deeply indebted to Colonel K. Rai, B.Sc. (Hons.), L.R.C.P. (Lond.), M.R.C.S. (Eng.), F.R.F.P. & S. (Glas.), D.O.M.S. (Eng.), D.P.H. (Lond.), Director of Health Services, Government of Saurashtra, for evincing a keen interest in the treatment and control of Leprosy and for kindly giving me permission to publish this paper. I am also thankful to Dr. H. H. Chavda, M.S. (Bom), Additional Chief Medical Officer, Sorath District, Porbandar, for his interest in the subject.

Hæmoptysis in Mitral Stenosis

Thompson and Stewart have recorded their observations on 168 cases clinically diagnosed as mitral stenosis 29 of which carried a history of hæmoptysis. Cases were not included in this group unless the sputum was heavily streaked with blood or consisted almost entirely of frank blood. The amount of blood varied and although as much as a pint was raised in some cases it was never a serious threat to life. The amount of blood coughed up had no prognostic significance since several of the patients who suffered the largest hemorrhages subsequently have done best.

The authors mention five conditions in which blood may appear in the sputum of patients suffering from mitral stenosis :—

(1) Pulmonary œdema ; (2) pulmonary infarction ; (3) during the course of primary pneumonia ; (4) paroxysmal pulmonary hæmorrhage ; and (5) as a sign of acute cardiac failure.—*J.A.M.A.*, 1951 and *Med. Rev.*, 46 : 3, March 1952.

MODERN THERAPY FOR B. COLI INFECTION*

A. K. SARCAR, M.B., D.P.H.,
Nababganj, Nadia.

I. Hexamine or Urotropin is reputed to be a strong urinary antiseptic for a long time and is being used for *B. coli* infections. It is rapidly absorbed and excreted in the urine within an hour after administration. The quantity excreted in the urine varies with the absorption, about 20 to 30 per cent. being decomposed in the stomach during digestion but only about one per cent. during fasting when the stomach contents are feebly acid. If used for a prolonged period, a concentration of 1 in 2000 can be obtained with a dose of ten grains. It is no doubt a powerful urinary antiseptic but its action and usefulness depend on the formation of formaldehyde in acid urine. In *B. coli* infections, the urine is highly acid and the use of hexamine alone will sterilise the urine but may take time. It should be noted that a highly acid urine will irritate the urinary tract; therefore, it is desirable to use large doses of alkalies (citrates or acetates) to make the urine alkaline. Again as the growth of the colon bacillus is inhibited in an alkaline urine, the alkalies will allay the irritation and also prevent further growth of the organisms. If the infection of the urinary tract is due to pyogenic cocci or putrefactive organisms, the urine becomes foul and alkaline, as in the case of cystitis and pyelitis; the urine in such cases should be rendered acid, to enable the hexamine to act. To ensure acidity of the urine, acid sodium phosphate should be given in doses of 20 to 30 grains, or Sodium Benzoate in doses of 5 to 30 grains or ammonium chloride 5 to 20 grs, three times daily. The dose should be adjusted to make the urine acid to litmus paper. In generalised infections with *coli* organisms hexamine is given intravenously (2 to 5 c.c. of a 20 to 40% solution) with good effects. When given in 10 grain doses, it produces so little formaldehyde that its concentration cannot reach the zone at which bactericidal action can take place. On the other hand the higher doses are irritating; the continued presence of quite a low concentration of formaldehyde in the urine has some effect in inhibiting the growth of organisms in chronic infections. Hexamine *per se* is not irritating but formaldehyde is and in susceptible persons may cause painful micturition followed by cystitis and even haematuria.

II. Pyridacil is said to be the disinfectant of choice of the urogenital tract for peroral use and it is also an anti-rheumatic drug. This is indicated chiefly in acute and chronic cystitis, pyelitis, cystopyelitis and cervical discharges. Infections caused by *B. coli* alone or in conjunction with cocci often require somewhat prolonged treatment. The drug should be administered

* Specially contributed to THE ANTISEPTIC.

at regular intervals in order to maintain a continually high concentration of the drug in the urine. Also the treatment should not be broken off too soon, on the strength of any subjective improvement felt by the patient. The enormous penetrating power of the drug makes it particularly useful for the treatment of post-gonorrhœal diseases. I treated a chronic case for 7 days with 6 pills a day; the disease was controlled but not fully cured of all troubles. If treated for at least 3 weeks, better results might have been obtained.

III. Mandelic acid.—Clark experimented in 1931 by giving patients a diet containing a large quantity of fat and a minimum of carbohydrate which caused incomplete combustion of fat with the result that β -hydroxybutyric acid appeared in the urine, which not only rendered the urine acid but also acted as a powerful bactericide. Since β -hydroxybutyric acid is liable to be destroyed in the upper alimentary canal when given by mouth and the treatment of the patient by ketogenic diet is unreliable and difficult of control, mandelic acid is used as an effective substitute. If the pH of the urine is maintained below 5·5, mandelic acid will be sufficiently bacteriostatic or bactericidal in *Bact. coli* pyuria, cystitis and in pyelitis of pregnancy and puerperium. It is also valuable in *St. faecalis* infections of the urinary tract and possibly also in other infections e.g. *staphylococcus albus*.

Instead of the acid, which is somewhat irritating, sodium or ammonium mandelate is generally used. The practice is to administer sodium mandelate, after giving previously a mixture containing ammonium chloride. Ammonium chloride often causes nausea and vomiting. To obviate this difficulty ammonium mandelate was introduced. As ammonia is converted into urea, the liberated mandelic acid makes the urine acid. Calcium mandelate has superseded the ammonium salts and is used in doses of 4 g. (60 grs.) four times a day. It is claimed that this salt is comparatively tasteless and does not need an acidifier for the urine. Ammonium chloride should be given in 15 gr. doses, 4 times a day, if necessary may be continued 5 to 6 times, but this should not be given for longer than 2 to 3 days at a time.

Many proprietary preparations are now available which claim to be easy of administration, not requiring separate acidifiers of urine. These are used in doses of two spoonfuls in 2 ounces of water, 4 times a day after meals. The treatment should be continued for 10 days and during this period the fluid intake should be restricted to 2 pints a day in order to maintain the required concentration of mandelic acid in the urine.

Contraindications :—Sometimes it may produce diarrhoea, haematuria and dysuria. It should not be given when there is impairment of the renal function.

IV. Penicillin is said to be effective in dealing with genito-urinary infections; Thomson in 1944, recorded satisfactory results in one hundred such cases, including cystitis, prostatitis, pyelonephritis etc. In many cases, however such infections are due to *B. coli*, which is insensitive to penicillin. If cystitis be due to *B. coli* and gonococci, it is advisable to administer penicillin.

V. Sulphanilamide is very effective in *B. coli* infections e.g. pyelitis, cystitis, peritonitis etc. In urinary tract infections with *B. coli* it is better tolerated than mandelic acid and may be given in acute cases. The dose required is 2 g. daily divided into 4 doses and given every six hours continually for 5 to 7 days. In cases of septicaemia the dosage must be large and given as usual.

VI. Sulphathiazole is a more effective bactericide than sulphanilamide in *B. coli* infections. As the drug is rapidly excreted the dosage may have to be greater than sulphanilamide. Treatment with sulphadiazine may cause serious side-effects, a sudden onset of rigor and fever, sometimes associated with a rash, conjunctival injection or myalgia. In such cases the fever persisted, coma rapidly developed and in 2 cases anuria became a prominent feature. The indiscriminate and uncontrolled use of this drug is not therefore without risk. (*Medical World*, 1943, Jan. 15). But this is the drug *par excellence* in the treatment of gonorrhœa as all cocci are destroyed within a week. So in cystitis due to gonococci and *B. coli* this is obviously the drug of choice.

VII. Sulphadiazine.—It is an effective chemotherapeutic agent in the treatment of *B. coli* and gonococci infection and superior even to sulphathiazole. It is less toxic but must be used cautiously as serious-even fatal-consequences have been recorded.

VIII. Sulphamerazine is approximately as effective as the other sulphanilamides in the treatment of coccal infections and a comparison of the action shows:—(a) No more toxic than sulphadiazine and considered less toxic than sulphathiazole; (b) on the same oral dose, a higher blood concentration is more rapidly attained with this drug; and (c) it is more rapidly absorbed from gastrointestinal tract and much more slowly excreted in the urine. This should be given a trial in cases of *B. coli* infection. In smaller doses it is claimed to be as effective as sulphathiazole or sulphadiazine.

Intravaginal Penicillin Therapy

Walter and his colleagues treated 35 patients with penicillin suppositories by the intravaginal route. 21 of these were trichomonas vaginitis; and only 10 of them benefited fully. Seven patients with endocervicitis (non-specific) who were treated once or twice a day with the penicillin suppositories for one or two weeks, all benefited completely. Side-effects in the whole series of 35 patients included 5 complaints of vaginal irritation, and burning sensation on inserting the suppository: one complaint of abdominal cramps; one of vulva and dermatitis. It was not however, necessary to discontinue the treatment.—(*New York State Jour. Med.*, U.S.A., 1-4-1951, pp. 937-939).

Cases and Comments

TREATMENT OF TYPHOID FEVER WITH CHLOROMYCETIN

(A Report on 5 Cases)

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CHLOROMYCETIN is one of the newer antibiotics used now-a-days in the treatment of typhoid fever. The dosage varies with different physicians as well as in different hospitals. There is no question about the effectiveness of the drug in this fever; but, I think this costly drug is wasted a lot, in attempts to reduce the fever and the general toxic symptoms in a very short time.

The following is the method of treatment adopted in our indoor department for typhoid fever cases :—

I use 2 kapseals thrice daily (only during the day time) in adult cases, till the temperature comes to normal and stop giving it as soon as the temperature becomes normal or subnormal; the condition of the patient is watched and the temperature recorded twice daily. In children below the age of 10, I use one kapseal thrice daily, till the temperature becomes normal or sub-normal and then the drug is stopped. The condition is watched and the temperature recorded twice daily.

In the case of children the kapseal is broken and the contents mixed with twice the quantity of ordinary sugar; some water is then added to it in a spoon and the mixture is poured into the mouth of the child patient, as far back as possible into the mouth. Sugar masks the bitter taste of the drug to some extent.

I record below cases in which clinical improvement occurred on the third or fourth day and certainly on the fifth day in primary cases and immediate results were obtained on the 2nd day, in cases of relapse.

Case reports.—CASE 1 :—A girl, aged about 12, was brought to the dispensary with a history of continuous fever for the last one month. Blood examination was not done, for want of facilities. And so the medical officer of rural dispensaries, has to rely entirely on his clinical experience and judgement for a proper diagnosis.

This case was admitted, as a case of relapse in typhoid fever. In this case all measures applied by local practitioners to bring the temperature down to normal had failed.

At the time of admission the (M.T.) morning temperature was 99°F., and evening temperature (E.T.) was 100°F. There was no history of diarrhoea or vomiting. She had no other symptoms,

except fever and debility. On examination, no other focus of infection was discovered.

She was given one kapseal of chloromycetin thrice a day, only during day time; on the next day, the morning temperature became sub-normal, as also the evening temperature.

Chloromycetin one t.d.s. was however continued for two more days and one daily for a further 3 days. It was stopped after six days, when a total of twelve kapseals had been given. No side effects due to the drug were observed, nor any other complications; and the patient was discharged.

The daily diet consisted of *milk* three times a day and tea three times a day and sweet lemonade water as and when required by the patient. Six feeds were given daily, and the temperature was recorded twice a day. The patient was discharged after 17 days. No further relapse was reported. I consider that the use of chloromycetin in this case after the temperature had become sub-normal on the very first day was unnecessary and could have been stopped thus saving the extra high cost of the medicines to the patient.

CASE 2.—Patient B., aged about 12 was brought to the dispensary with a history of fever for the last two months. The patient had been treated by the local practitioners (quacks?) as a case of pulmonary tuberculosis, but with no relief from fever. The patient was very weak at the time of examination; his M.T. was 101°F. and his E.T. was 102°F. There were no other presenting symptoms, except the fever and weakness. His lungs were free and no other focus of infection could be detected. It was treated as a case of relapse in typhoid fever, as judged by the results of my clinical examination.

On the first day, 3 kapseals of chloromycetin were given at 10 A.M., 2 P.M. and 6 P.M.; on the next day, the M.T. came down to normal but the E.T. remained above 100°F; on the third day, the M.T. became sub-normal and E.T. was 98·4°F. On the fourth day only one kapseal of chloromycetin was given and the temperature was watched morning and evening. The drug was then stopped and no other drug or medicine was given subsequently; only the effect of chloromycetin was watched.

The diet included milk tea and sweet lemonade water whenever required by the patient. No toxic effects due to the drug were noted.

The patient was watched for a further one week and as the temperature remained normal he was discharged 26 days after admission. There was no complication except weakness. He was advised to resume normal diet after 15 days.

CASE 3:—Patient S., aged about 30 was admitted on 14-9-'51 complaining of fever; several measures had been tried, without success to bring down the temperature and lessen the general

toxic condition of the patient. Chloromycetin was then tried. Two kapseals were given thrice daily; His M.T. was on admission 103°F. and E.T. was 104°F. Chloromycetin in the above dosage was given for 4 days and the temperature on the last day was found to be:—M. T. 98°F. and E. T. 99°F. One kapseal per day was given for the next two days and then the drug was stopped. After the sixth day, the M.T. was 97.8°F and E.T. was 98.4°F. The patient was discharged cured, after 14 days with no other complaint except weakness. Being poor he could not afford to remain longer in the hospital and take further treatment. His diet during treatment was milk, tea and sweet lemonade water.

CASE 4:—Patient J., aged about 30, from a nearby village was admitted with fever, his morning temperature being 102°F. He was unconscious and could not speak; the most prominent symptom was fever. There was no history of diarrhoea, etc. No abdominal distention was noticed.

He was treated with antimalarial drugs for 4 days along with other chemotherapeutic agents, but no improvement resulted and the daily temperature remained high; the patients was unconscious and was forcibly given liquid feeding.

From the 5th day onwards for the next 3 days, he was given chloromycetin, two kapseals thrice a day; there was but slight variation in the course of the temperature. The unconscious condition still persisted. As the patient was very poor and could not afford to purchase enough of the drug, only one kapseal was given daily for two more days and the drug was then stopped. The M.T. came down to 98.0°F. and E.T. was 99°F.

No other medicine was given; but the condition of the patient was watched. He was given only liquid diet e.g. milk, tea and sweet lemonade water.

On the 7th day after admission, the patient regained consciousness and could speak and recognise the faces of his relatives. His M.T. was 97°F. and E.T. was 98°F. After the stoppage of the drug, the temperature again rose to 99°F. and 100°F. but subsided of itself without any further treatment.

The patient was discharged from the hospital after 21 days with no other complications except debility. During the course of the treatment, no side effects were seen. No report of further relapse was subsequently received. The patient was advised to resume his normal diet only after ten days.

CASE 5:—In this case chloromycetin failed to bring down the temperature; so it was supplemented with dihydro-streptomycin and penicillin. This triad proved very effective and useful in lowering the pyrexia of a child, when chloromycetin alone had failed to act.

Patient B., aged about 7 years was examined in his village home, four miles away from the dispensary. At the time of

examination, his temperature in the axilla was 102°F. No other foci of infection could be detected.

The child had been suffering from fever for the last eight days. Local domestic and other remedies had proved unavailing. The condition of the patient—an only son—had meanwhile grown worse and worse; and the anxious parents agreed to get him admitted into the indoor wards of the dispensary.

On the next day after admission, the child was given one kapseal of chloromycetin thrice daily. His M.T. was 101°F. and E.T. was 102°F. On the second day, the dose of chloromycetin was doubled, in order to bring the temperature down and also reduce the toxic condition. The patient was in a drowsy and sleepy condition; no improvement or variation in temperature had occurred; but there were small discharges of faecal matter, with an offensive smell, several times during the day.

On the third day only one kapseal thrice daily was given: The M.T. was 101°F. and E.T. was 102°F. in the axilla. As the temperature had not come down to normal even with 12 kapseals, I combined with the chloromycetin, $\frac{1}{2}$ g. dihydro-streptomycin and two lacs of penicillin and administered the mixture in the morning. This treatment was repeated in the evening. The response was dramatic and remarkable.

On the fourth day after admission, the M.T. was 97°F. and E.T. was 98°F. During the whole course of treatment no other drug was given; further administration of chloromycetin, streptomycin and penicillin was stopped. The child was observed twice daily. The M.T. remained 98°F. and E.T. was 98·6°F. for fifteen days till he was discharged. There were no other complications, or side effects produced by the triad of drugs.

He was given milk tea and sweet lemonade water, alternately every two hours. No other medication in the form of vitamins or tonics was given, except orange juice.

It is interesting to note that in this case, chloromycetin given alone failed to produce any effect and that the combination of chloromycetin with streptomycin and penicillin effected rapid improvement in the temperature and in the lethargic and toxic condition of the patient.

Conclusion.—1. Simple (*i.e.* smaller than the ordinary doses) doses of chloromycetin produced the same effect, as the ordinarily used loading doses, at much less cost but in nearly the same time.

2. Even the poor patient can afford to get the treatment, if only the simple and *not* loading doses of chloromycetin are given.

3. In my last case, (No. 5) where chloromycetin alone failed to reduce the temperature, a combination of it with dihydro-streptomycin and penicillin, proved magically effective, due perhaps to a synergistic action of the triad.

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PANCREATIC ABSCESS

(A Case Report)

Y. ABRAHAM, F.C.P.S.,

Surgeon, L. M. Hospital, Neyvoor, South India.

A PATIENT, M. M. of Thiruvithancode, aged 42, was admitted to the London Mission Hospital, Neyvoor on 19-10-1951, with severe pain in her upper abdomen. Before admission the patient was having pain for four days and had not passed any motion during that period. She had tried native treatments before coming to the hospital. When she came in, the pain was in the upper abdomen. On palpation the lower abdomen was very soft and the upper abdomen was rigid and tender.

Previous history.—She had similar pain five years previously which lasted for 22 days and was relieved with medical treatment. After admission, enema and colon wash were tried twice daily for four days. They did not give the patient any relief. Blood examination revealed a W.B.C. count of 25,200 on 20-10-'51, of 18,200 on 22-10-'51 and of 14,000 on 24-10-'51.

The patient was given penicillin injections, 50,000 units four hourly for three days. The W.B.C. count was reduced as stated above from 25,200 to 14,000, but the patient did not feel better. On palpation a solid tumour was felt deep down in the abdominal cavity in the epigastric region. The tumour felt was in the middle line. It was diagnosed tentatively as intussusception or pancreatic cyst or malignant growth of the transverse colon.

The patient was given a barium enema on 21-10-1951 and examined under X-ray. There was no sign of intussusception, the caecum was free and there was no growth of transverse colon. After the X-ray examination the patient passed the barium meal and motion with flatus. That gave her temporary relief of the pain and discomfort in the upper abdomen for 12 hours. Afterwards the pain started again and was continuous. Pethedrin 2 c.c. was injected every night for a few days; sometimes a pre-anæsthetic 0.5 c.c. was given as injection (the pre-anæsthetic contained : Morphia hyd. $\frac{1}{4}$ gr., Atropine sulph. 1/100 gr. and Hyocine hydrobromide 1/150 gr. in 1 c.c.). These injections did not give her any relief. Then it was decided to do a laparotomy.

The patient was prepared for laparotomy on 26-10-1951. Spinal anaesthesia of 4% Novocain 2.75 c.c. diluted in spinal fluid up to 10 c.c. was given. The usual para-medium incision was made. On opening the abdominal cavity the colon was free from the malignant growth. No intussusception was discovered. The stomach was normal in size. As the pancreas was very hard and indurated it was suspected to be malignant. But on further exploration a swelling was noticed on the head of the pancreas and the swelling

was fluctuant. The swelling was carefully aspirated and very thick pus was found. Then the abscess was very cautiously opened and about two ounces of pus taken out. Then, the abscess cavity was drained with a long tube kept in position for a period of ten days. After the operation the patient had no pain and she was feeling better day by day. She had a very peaceful convalescence. Penicillin I.M. was given, in doses of 50,000 units, four hourly for four days, and sulphathiazole by mouth 2 tablets four hourly was given for six days. The discharge gradually decreased and the drainage tube was finally removed on the 10th day. The patient stayed in the hospital till the wound was healed, and was discharged cured on 21-11-1951, about a month after admission.

Burns—A New Local Treatment

Curtis and Brewer suggest the use of partially hydrolysed casein gel in treating burns. By the use of this phosphoprotein derivative (readily obtained from milk by precipitation with dilute acids) there is "relief of pain, a minimum of infection and a splinting of the injured part." Many available proteins were studied. A "final" technique included removal of any loose necrotic skin with antiseptic precautions. "No cleansing of the burn is attempted unless grease has been applied in which case it is removed with ether." A sterile wooden spatula is used to spread partially hydrolysed casein "to the superficial as well as to the more deeply burned areas". A layer "at least 1/16 inch in thickness" is applied. The whole is "covered by impregnated gauze and then wrapped with a bandage."

This method permits early grafting by "allowing the body's own enzymatic and phagocytic systems to debride the area of deep burn". The authors claim that even untrained personnel may safely follow the routine. "It is simple and easy to apply."—(J.A.M.A., 20 10-'51, quoted by Med. Press, 20-2-'52, p. 167).

Treatment of Typhoid Fever in Children with Terramycin

Reilly and Earle, of the Paediatric Department in the University of Arkansas, report on the effective treatment of 4 out of 6 patients suffering from typhoid fever with terramycin. Dosage was from 2 to 3 g. daily, divided into equal doses given 6-hourly. The drug was administered orally either in capsules or as an elixir. In 4 cases there was a good clinical response, all the symptoms subsiding within 4 days. There was no sequelae or relapses, nor did the carrier state develop up to 3 months from the date of discharge from hospital. In the 2 cases which failed to respond, it is considered that the dosage may have been inadequate. No toxic effects were observed to follow terramycin in the dosage prescribed. The authors remark that since terramycin is relatively non-toxic the dose of 2 to 3 g. daily could be increased to deal with severe infections. They recommend doses of 200 mg. per kg. daily in the worst cases.—(Jour. of Paediatrics, April 1951).

A CASE OF PULMONARY AMOEIASIS

U. C. RAI, M.B., B.S.,
Assistant Surgeon, Durg, (M.P.).

AND
D. B. KOTHARI, M.B., B.S., D.T.M.,
Pathologist.

AMOEIASIS is a very common disease in our country, and amoebic hepatitis is the commonest complication of intestinal amoebiasis. Though not a very common complication, pulmonary amoebiasis must be given due consideration in cases of chronic lung diseases which are apt to be diagnosed as pulmonary tuberculosis. Choudhary and Choudhary published a concise account of this unusual complication with case notes in the *Indian Medical Gazette* for February 1946. Similarly D'Mellow described a case of amoebic pericarditis in the *Indian Medical Gazette* for December, 1947.

As a matter of fact pulmonary amoebiasis is more frequent than is ordinarily suspected, but often remains undetected or is perhaps wrongly diagnosed as pulmonary tuberculosis where laboratory facilities are not available.

CASE.—H. M., 33 years of age was admitted into the hospital on 28.8.'48 for the following complaints:—(1) Pain on the right side of the chest—1 month. (2) Cough—Not paroxysmal, attended with little expectoration for 8 days.

Personal habits :—Nothing special.

Past history :—No definite history of dysentery or any lung disease.

Family history :—No case of tuberculosis in the family.

History of present illness :—About a month back he got slight pain on the right side of the chest. It was a sort of catch in character and was a little exaggerated during deep breathing. Though no temperature was recorded, the patient said that he did experience a little rise of temperature. For the last 8 days he slowly developed a little cough also. Cough was not paroxysmal; attended with slight expectoration. Only once he noticed a reddish tinge suspicious of blood, in the sputum.

Physical examination :—A young man poorly nourished and anaemic. Temperature on admission 100.6°F.; pulse 100 p.m.; respiration 30 p.m.

Respiratory system :—Dullness in the right base and U. F. U. R. and B. S. diminished in that area; no adventitious sounds heard; aegophony present at the right apex.

Circulatory system :—Pulse 100 p.m., no other abnormality or complaints. *Abdomen* :—Liver—one finger below the costal margin; there were marks of branding, done about 2 months back; spleen—not palpable; colon—not thickened.

Laboratory findings.—*Urine*—S. G. 1010; acid—no abnormality. *Stool*—N.A.D. on 3 examinations. *Sputum*—no A.F.B. when examined a number of times. *Screening report*—“Fluid seen on the right side as marked; the lung above shows no parenchymatous lesion.”

With these findings the patient was admitted and put on the usual treatment for pleurisy with effusion. The case was treated in consultation with the tuberculosis specialist attached to the hospital. A.P. was unsuccessful and then phrenic crushing was done on 14.9.'48, as advised.

During this time the patient was expectorating blood stained sputum and also had occasional frank haemoptysis. The temperature ranged between 101°F. to 98°F. The sputum was repeatedly examined for A.F.B., with negative results and the treatment was continued on the usual lines. The temperature too was not yielding and the general condition of the patient was getting low.

One of us (Dr. Kothari) somehow had his own doubts and after repeated careful examination of sputum he declared it positive for amoebae on 5.10.'48. This gave us a new ray of hope and the patient was put on emetine gr. 1 with strychnine gr. 1/60 by injection daily. To our great satisfaction, the temperature dropped down the next day and became practically normal in two or three days and remained so till his discharge.

During his stay check screenings were done. The fluid soon got absorbed, leaving behind a condition of thickened pleura. After the detection of E. H. and treatment with emetin the radiologist opined it to be a case of thickened pleura. The adhesions and fibrosis in the right lower zone were obviously due to amoebiasis in this case.

There was a remarkable change in the general condition of the patient and in his temperature during emetin treatment, (*vide Temperature chart*).

As the patient was worrying to get back home, being fed up with hospital life, he was discharged 2 to 3 days after 9 gr. of emetin had been injected. He was given a course of a carbarsone and general tonic afterwards.

I saw him only once after he left hospital and he had nothing to complain and said he was all right. I could not contact him later.

Conclusion.—Pulmonary amoebiasis may be primary or secondary. In the absence of any other focus of infection, I am inclined to consider this case as one of primary pulmonary amoebiasis and I request my senior colleagues and teachers to throw light on this question, in the light of their own experience.

A CASE OF PULMONARY AMEBIASIS

U. C. Rai and D. B. Kothari

Name: C. Caste: Hindu. Age: 33 years. Sex: Male.

Date of admission: 28-8-1948. Result: Cured.

CHART 1

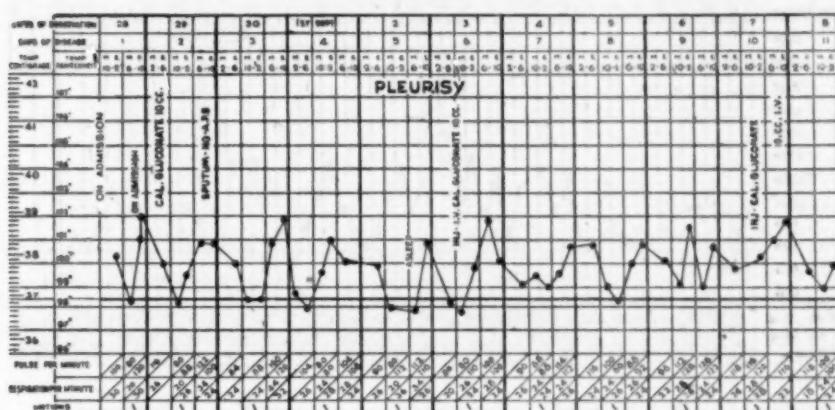
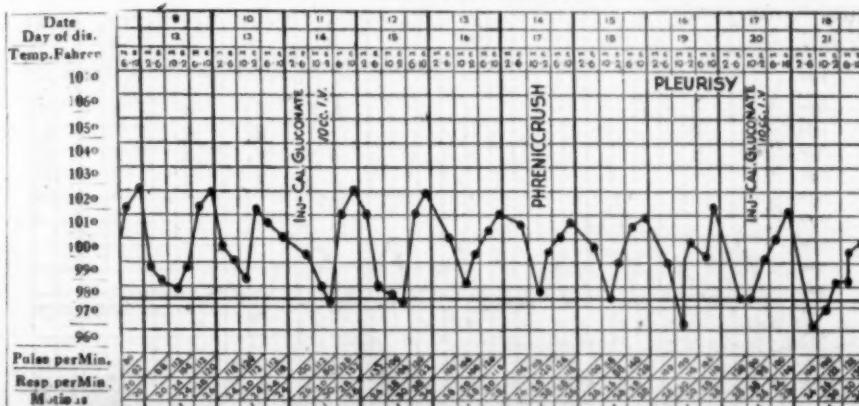


CHART 2

(Continuation of Chart 1)



Carried over

[Vide page 478.]

A CASE OF PULMONARY AMBESIASIS

U. O. Rai and D. B. Kothari

CHART 3

(Continuation of Chart 2)

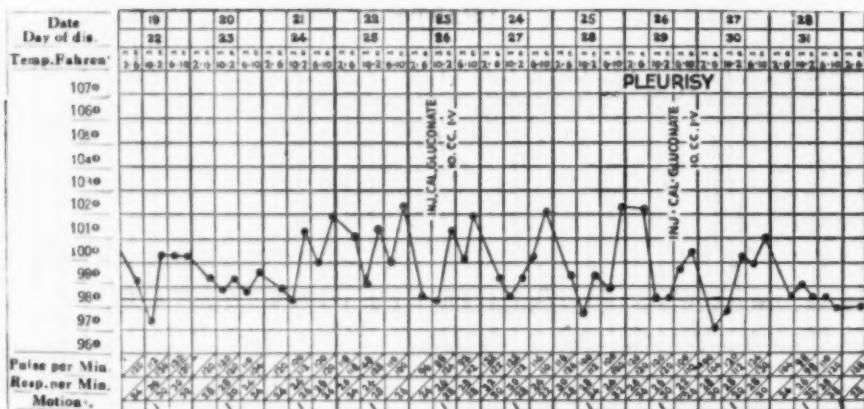
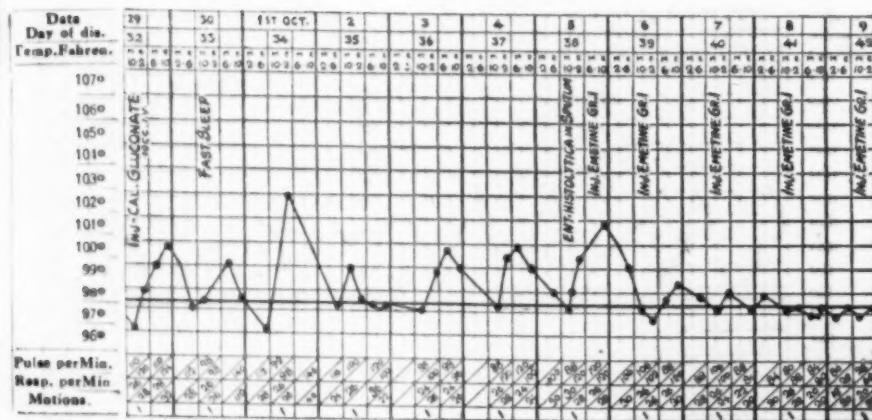


CHART 4

(Continuation of Chart 3)



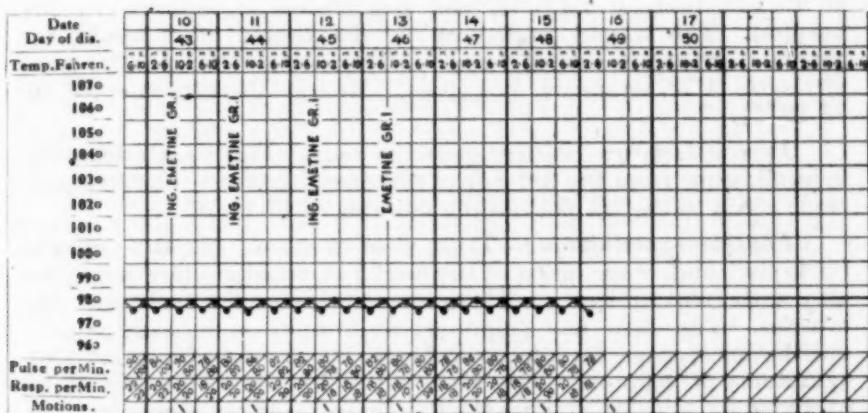
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A CASE OF PULMONARY AMOEIASIS

U. C. Rai and D. B. Kothari

CHART 5

(Continuation of Chart 4)



Arthritis due to Intestinal Amoebiasis

Rappaport *et al* report on 4 cases of arthritis, in whom there was reason to connect intestinal amoebiasis as the aetiological factor associated with recurrent polyarthritis. The condition was clinically indistinguishable from rheumatoid arthritis. Gastrointestinal symptoms were minimal, while the arthritic symptoms were outstandingly prominent. The isolation of *E. histolytica* from the stools and the rapid subsequent amelioration and response of the arthritis to amoebicidal therapy clinched the diagnosis. The arthritis in these cases was considered by the authors to be due to a toxin elaborated by the amoebae, rather than to any secondary infection of the intestinal ulcers. The authors advocate a routine and repeated examination of the stools in all cases of "rheumatoid arthritis", particularly when associated with gastro-intestinal symptoms.—(*Ann. Int. Med.*, 34, pp. 1224-1230, 1951).

[NOTE :—There have been some more articles in the recent literature, which also connect *E. histolytica* infection with arthritis and report prompt cures from amoebicidal treatment in such cases of arthritis.—Ed. ANTISEPTIC].

Circumcision and Penile Cancer

The prophylactic role of circumcision in the prevention of penile cancer has long been emphasized. Gordon-Taylor (*Br. J. Urol.*, 22:174) draws a distinction between cases of circumcision performed in infancy and those performed in adult life; epithelioma of the penis was found only in the latter. Abrams and Macnish (*Urol. Cutan. Rev.*, 54: 602) conclude from the statistical material available in the literature, that circumcision will give absolute protection against cancer of the penis if completely performed in early infancy and not otherwise. This can explain the rarity of the disease in Jewish people amongst whom it is the custom to have all male children circumcised on the eighth day of life. Cancer of the penis in the Jew has been reported only twice.—(*Med. Ann.*, 1951, p. 220).

[NOTE :—This custom of early circumcision, though not done so early as on the 8th day of life, has been the rule amongst Muslims in India. It will be a valuable piece of research if a statistical study of penile cancer amongst Muslims in India is made by our doctors.—Ed. ANTISEPTIC].

A CASE OF TETANUS

J. N. BHATTACHARJEE, L.M.F., D.T.M.,

Pathologist and A.M.O. Gopalpur T.E. Hospital, P.O. Gopalbagan (Jalpaiguri).

A LABOURER, S., of this Tea Estate, aged 38 years, came to this Hospital on 17-12-'51 for the treatment of spasm and lock-jaw.

Previous history :—Patient got an incised cut injury on the sole of his left foot on 1-12-'51, and was treated as inpatient in this hospital. The wound healed up in the course of 2 weeks by general antiseptic dressing and sulphanilamide by mouth; prophylactic A.T. serum was not given. He was discharged cured on 13-12-'51.

Present history :—Patient gave the history that he felt difficulty in swallowing from the 3rd day of his discharge from hospital and came again to the hospital on the morning of 17-12-'51.

Physical examination :—There were spasms of his face muscle (lock-jaw) and other parts of the body; he could swallow medicine only with great difficulty. There was stiffness of the neck and leg muscles. The case was diagnosed as tetanus as he had trismus, opisthotonus, risus sardonicus and also other classical signs and symptoms of tetanus. The possibilities of other diseases were excluded by suitable examinations. Temperature on admission was 97°F.

Blood examination :—Polymorphs 84%, small monos 15% and large monos 1%.

TREATMENT.—Immediately after admission, tetanus antitoxin 16,000 I.U. was given intramuscularly, as we had no more stock of it. The site of wound was opened by crucial incision and enlarged sufficiently. The wound was dressed with Tr. iodine forte gauze packed inside the wound. Bromide with chloral hydras as mixture was given by mouth every 4 hours and 25% Mag sulph solution 7 c.c. were given intravenously. Patient had no temperature on the first day but it rose from the next day. On 18-12-'51, the temperature rose to 101.6°F. The intensity of the spasms and their frequency and the lock-jaw were increased. Antitoxin 44,500 I.U., I.M. and other treatment were given as before.

19-12-'51 to 21-12-'51 :—Temperature continued to be high, intensity of spasm increased, with hurried respiration. Considering the high polymorph count and temperature, soluseptasine 10 c.c. I.M. was given for 3 days. Antitoxin total dose in 3 days, 1,33,000 I.U., were given. Mag. Sulph. 25% I.V. and other sedatives by mouth were continued. (*vide Temperature chart page 482*).

22-12-'51 to 23-12-'51.—There was no response; the temperature continued to vary from 99°F. to 101°F. One good sign was the slight relaxation of the right extremities and the spasm was less in

intensity. Antitoxin—54,000 I.U. in 2 days; and Quinine bi-hydro-chlor gr. 10 in 2 c.c. injected I.M. for 2 consecutive days.

24-12-'51.—Temperature still 99°F. General spasticity and all other signs and symptoms of tetanus were same as on previous days.

25-12-'51.—Tetanus antitoxin was continued for further 2 days and 40,000 I.U. more were given.

26-12-'51.—Signs and symptoms of tetanus were much less from this day. There was relaxation of the upper extremities but the patient could not move his lower extremities. Administration of antitoxin was stopped from this day. 25% Mag. Sulph. 5 c.c. was continued for a further week.

27-12-'51 to 28-12-'51.—Temperature touched normal. General condition was much better. Patient could swallow with much less difficulty. Spasm of lower extremities persisted but in a milder degree. He was able to draw his leg and could partly open his mouth.

2-1-'52.—There was general improvement but the temperature again rose to 100°F. Cough was present and there were scattered rales in the right lung. Patient was given M & B 693 for 3 days and temperature dropped to normal.

5-1-'52.—Patient was much better. All the signs and symptoms disappeared; he could not however sit properly in bed until 10-1-'52; he then made a gradual but uneventful recovery. Iron tonics and vitamins were given to hasten recovery. The case was discharged as fully cured from the hospital on 2-2-'52.

Discussion.—Total antitoxin given—2,88,000 I.U.

The case improved fully under antitoxin and 25% Mag. Sulph. solution I.V. Quinine had no action on the spores as there was no response in temperature and other signs of tetanus in this particular case; Lahiri has reported on the success he had with quinine in a case of tetanus (*Jour. Ind. Med. Assoc.*, xx, 2, p. 52); but my experience shows it had no action at all.

For want of sufficient stocks we could not administer full doses of anti-tetanic serum at the earliest opportunity; otherwise the case under report might have improved earlier. Local treatment of the wound is more important than even general antitoxin administration as unless the focus of infection is checked, no amount of antitoxin can be of real value.

Acknowledgement.—I am grateful to Dr. N. C. Mazumdar, M.B., C.M.O. of this Estate, for encouragement and valuable suggestions regarding treatment in this case and for his kind permission to publish this note.

A CASE OF TETANUS

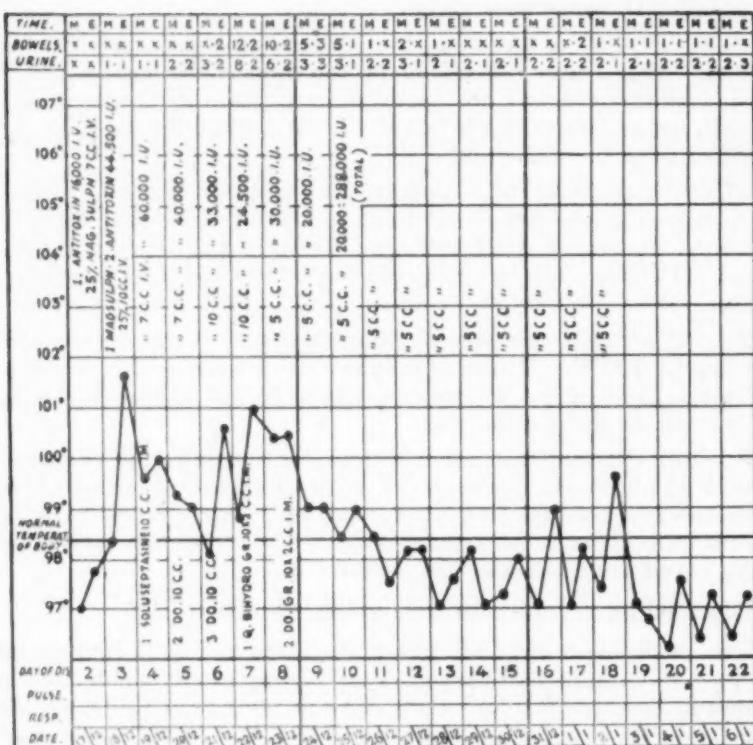
J. N. Bhattacharjee.

Disease : Tetanus. Name : S. Age : 38 years.

Diet : Liquid : Case Book. No. 346.

Date of admission : 17-12-'51. Result : Cured.

CHART



1. Lock jaw. 2. General spasticity of muscle. 3. Opisthotonus.

4. Risus sardonicus. 5. Difficulty in swallowing.

[Vide page 480.]

The Injection Treatment of Hydroceles

The year 1951 has witnessed a revival of the non-operative management of hydroceles. Pia and Gambetta using a 25 per cent solution of quinine in a ten per cent glycerinated water, claim a cent per cent success in 143 cases which they have treated. One of the drawbacks of this method of injection treatment of hydroceles is the sharp pain which patients experience in the groin soon after the entrance of the sclerosing medium into the tunica vaginalis. In this respect, Mayers (*Urol. Cut. Rev.*, 54 : 60) offer a very practical suggestion; this distressing pain can be completely obviated by injecting 5 to 15 c.c. of 1 or 2 per cent procaine solution into the sac after it has been emptied. Five to 10 minutes will be sufficient for full anaesthesia of the sac.—(*Med. Ann.*, 1951).

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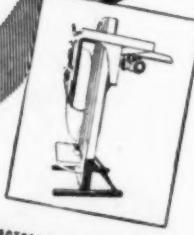
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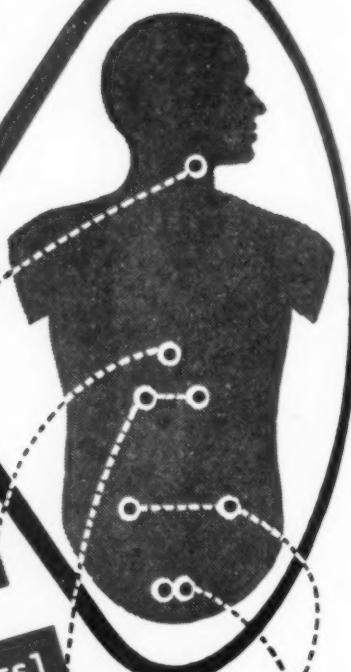
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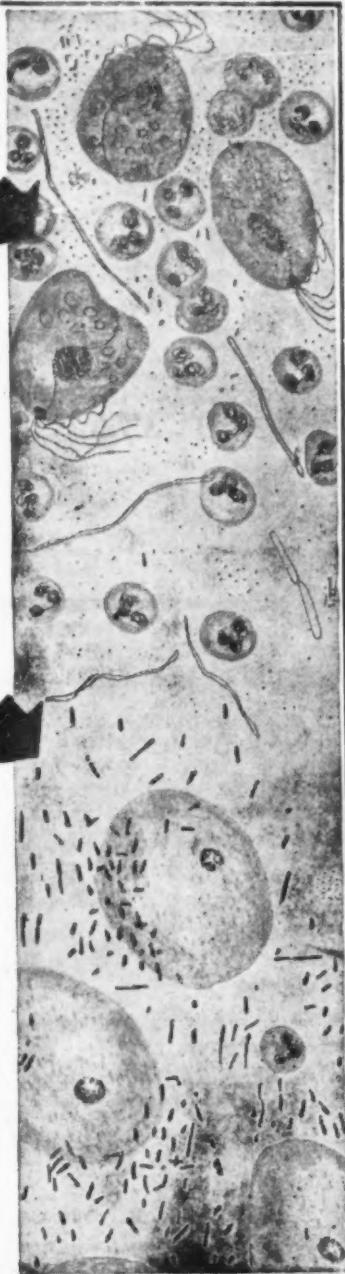
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ESTD 1904

A Monthly Journal of Medicine and Surgery

Published on the 15th of every month.

Founded by the late Dr. U. RAMA RAU

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No. 6

A TITAN PASSES AWAY: The Late Dr. U. RAMA RAU

IN an all too brief announcement in our last issue we referred to the passing away on the 12th May '52, suddenly of heart failure of our Founder and Senior Editor, Dr. U. RAMA RAU. He was in fact the last of a galaxy of very distinguished pioneers of a preceding generation, who worked and fought hard for the rights of man in all fields of human endeavour. His one objective in life was to secure the 'Parliament of Man' and the 'Federation of the World'. This at one time was, in the words of this giant among men, a poetic dream but it was certainly prophetic, for we see today the gradual evolution and realization throughout the civilized world and in our own Bharath of these great and high ideals of democracy. The two great world wars have only served to accelerate the pace in the march of events leading to this goal, envisaged by our doctor patriot so long ago as 1904 when he, along with an equally enthusiastic and ardent public worker, the late Dr. NAIR, founded the 'ANTISEPTIC' — a name intended to perpetuate the epoch-making discovery of antiseptic surgery by LORD LISTER.

It is in no spirit of glorification of the services and deeds of the worthy doctor who is no longer with us, that we are offering to our readers, a somewhat detailed but still inadequate account of his life work and services to the profession and to the country at large; in doing this we are prompted solely by a desire to indicate to the members of our noble profession, particularly those of the younger generation the numerous opportunities before them for rendering service and help in various directions and spheres of human activity, other than their main avocation of curing the ills, which flesh is heir to: they will thereby add to the sum total of human welfare and happiness and of national prosperity. Every member of

the profession wherever he may find himself placed can do his little bit in this direction and will find, in this brief chronicle of the life of this selfless patriot, a beacon light and a source of inspiration to guide him.

The life of Dr. U. RAMA RAU is really the story of the remarkable rise to the pinnacle of fame and glory of a comparatively poor young man, who came to Madras from his native district of South Canara in 1896 when he was 22 years of age and zealously and assiduously worked his way up, by dint of perseverance, industry, hard work and above all by his innate zeal for service to his fellowmen. Dr. U. RAMA RAU—as a doctor who set up private practice in 1899, preferring it to Government service, soon established himself as a kind and readily accessible doctor in the busiest part of Madras City. He soon became exceedingly popular and earned the really enviable distinction of being acclaimed by all as the "Poor man's doctor". The student population of the City flocked to him and always received the kindest and most considerate treatment at his hands. His genial temperament, affable manners and distinctive personality gained for him immense popularity even amongst his brethren in the profession, both private practitioners and doctors in Government service. The fact that he was returned for successive terms to the Medical Council which was inaugurated in 1914 is ample proof of his great popularity.

As a public health worker and propagandist, Dr. RAMA RAU had few equals and to him is due all the credit for creating an interest in the public in all matters pertaining to personal hygiene and community health, by means of his numerous lectures, lantern slide demonstrations and more than anything, by the strenuous fights which as a City Father, he put up in the Corporation of Madras, and forced them to adopt prompt measures for ensuring and safeguarding the public health of the citizens. He was a bold and tenacious fighter and the two dynamic personalities in the City Council (himself and Dr. Nair) were responsible for cleaning the ægean stables of the Corporation at that time and this, against enormous opposition from vested interests.

He never allowed himself to be hoodwinked or browbeaten when he was espousing a just and popular cause calculated to improve the general well being of the citizens. He undertook numerous lecturing tours, even into the districts to popularise the ideals of sanitation and public health and later of First aid measures. This did interfere with his practice but it did not deter him from his ideal of social service. While he was a Councillor of the Madras City Corporation he hit upon the novel idea of issuing every month at his own expense, a 'Guide to Ratepayers' both in English and in Tamil, which was distributed free to all the ratepayers in the City. His popular lectures on Temperance, First Aid and General Health matters were well attended and any little civic conscience that is

now visible in the masses, may be attributed to the untiring zeal of this wonderful Health missionary. As an honorary Presidency Magistrate he was known to be a thoroughly impartial but firm judge, holding the scales of justice quite evenly between man and man. He was the President founder of the Honorary Presidency Magistrates' Association which recently met to offer its tribute to the memory of its late founder.

During the first world war, Dr. RAMA RAU organised Ambulance and First Aid Classes and Units and was in fact the very soul of the movement which became exceedingly popular mainly as a result of his efforts. His munificent and benevolent work was recognized by the Venerable Order of the Hospital of St. John and he was awarded the "Silver Donat". A memorial parade was held on 1-6-'52, of all the ambulance units in the city in memory of the late Dr. U. RAMA RAU who was the Vice-President of the St. John Ambulance Association of S. India. He took a prominent part in the organization and equipment of the Hospital ship "*Madras*" in 1917. He published pamphlets on First Aid in Accidents and kindred subjects, the sale proceeds of which went to the war fund. He was deeply interested in temperance work long before other politicians thought of prohibition. He was a member of the Indian National Congress ever since 1898, and was elected to the Madras Legislative Council, under the Montford Reforms in 1921. Five years later he was elected a member of the Council of State on the Swarajya party ticket, but had to resign in 1930 on a mandate from the Congress. He then became an elected member of the Upper house in the Madras Legislature in 1936 and was elected President thereof. He continued in this office till 1945. As an ardent congressman, he was the Vice-chairman of the Reception Committee of the Indian National Congress Sessions held at Madras and at Belgaum.

As a legislator in the different houses of the legislatures during many long years, he was greatly interested not only in Medical and Public Health matters but also in problems relating to compulsory education, reduction of land tax etc. Of his achievements in bringing about reforms and improvements to the Medical and Public Health services of the State, Dr. RAMA RAU's editorials in the *ANTISEPTIC* from time to time between 1904 when the journal was founded and the present time will bear eloquent testimony. It was really due to his tenacious and persistent agitation and editorial representations that the Government was compelled to grant many of the reforms for the betterment of the independent medical profession though not in full measure, atleast in stages and with reservations that were considered necessary by the alien bureaucratic Government of the time, for safeguarding the vested interests of the Indian Medical Service men, the vast majority of whom were Europeans.

The *ANTISEPTIC* which "commenced its first voyage in May 1904" had to buffet through stormy seas but steering clear of shoals

and rocks has now been sailing smoothly and softly on the high seas ; the credit for all this is mainly due to the farsighted and extraordinarily astute navigator Dr. U. RAMA RAU, assisted by his no less capable son Dr. U. KRISHNA RAU and a devoted band of tried and seasoned sailors all of whom together formed a happy family. As one of the local periodicals stated the other day while reviewing the life and work of this savant, the entire staff of his ANTISEPTIC, of his dispensary, pharmacy and nursing home, have all been there steadily with him for the last 32 years. "They are all part of the family" as the veteran doctor himself once explained. The chronicling of all the achievements of the ANTISEPTIC during the 48 years of its useful existence is not an easy matter as they are far too numerous to be brought within the compass of this brief memoir. We propose therefore, to state the aims of the journal as summed up in its very first number and after merely mentioning some of the more important reforms which resulted from the unflinching and persistent advocacy in its editorials from time to time, will leave our readers to judge for themselves the extent to which the pioneering activities of this dynamic personality have borne fruit during these years and how the members of the medical profession in general have stood to gain in the matter of their prestige and prospects.

The aim of the journal was stated to be "to bring the medical profession in India to its legitimate place in the forefront of all learned professions will require the united efforts of all its members, official, non-official, European and Indian. The parliament of man and the federation of the world is still a poetic dream but it rests with the medical profession in India and Great Britain too, whether the idea of a limited medical profession in India, a General Medical Council for India, a Medical Registration Act for India, should remain a dream indefinitely or brought within the range of practical politics within the next few years."

That these and many more ideas formulated in this journal from time to time, have not remained mere dreams but have been brought within the range of practical politics within the last 48 years, are facts within the knowledge of the readers of the ANTISEPTIC. Numerous are the achievements standing to the credit of the ANTISEPTIC :—In the cause of the rightful claims of the medical profession, (whether private practitioners or public servants) being recognised by the Government and the body politic, in the thankless and thriftless task of arousing the conscience of the Madras Corporation and other similar bodies to a sense of their duty to the public in the matter of safeguarding the public health of the city and other populous stations in the mofussil and in the advocacy of measures for providing progressive medical relief to the country at large and bringing it within easy reach of the poor in remote rural areas (if still only to a very limited extent), Dr. RAMA RAU has fought and won (along with his illustrious co-worker the late Dr. NAIR who died however in 1919 leaving Dr. RAMA RAU to continue the battle) the stiffest battles against formidable opponents. And in the hands

of these two valiant champions, the ANTISEPTIC proved to be a most useful, ever-handy and powerful weapon to fight out the battles of suffering humanity.

Vaccination by qualified men with due care and proper precautions, the reorganization of the General Hospital at Madras, and of the subordinate medical establishment, the question of broad-basing, expanding and improving medical education in India, the dissemination of valuable knowledge amongst the people of the land relating to sanitation and personal hygiene through popular journals in English and the vernaculars, the removal of internal friction within the medical department, the abolition of the unwarranted and illogical distinction between the L.M. & S. and the M.B., B.S., the creation of a rural medical relief organization, the promulgation and ultimate fruition of the idea of having a General Medical Council for India, the arranging of All India Medical Conferences, the separation of the medical and public health sides of the Governmental machinery and the formation for the first time in India of a separate cadre of District and Municipal Health Officers, the expansion of facilities for training a larger number of medical men, the abolishing of the 'caste distinction' that prevailed between L.M.P.'s and M.B.'s—these are but some of the numerous subjects which engaged the constant attention of the ANTISEPTIC and in the aggregate of the measure of success achieved jointly and severally in these matters, the reader will be able to note the monumental nature of the services rendered to the country by the ANTISEPTIC and its indefatigable editors, with ungrudging devotion and unflagging zeal. The career of usefulness still before the ANTISEPTIC is vast and endless and with the co-operation and good wishes of its readers and well wishers the ANTISEPTIC will live long and continue to render further valuable service.

What still remains to be said in this short memoir, relates to the other social and humanitarian activities of our beloved senior Editor who has passed away after reaching the highest pinnacle of fame that is given to any mortal man to reach in his brief span of life. Dr. RAMA RAU maintained at his own cost a private hospital to treat congress volunteers during the Salt Satyagraha Campaign. He was of a very charitable disposition and gave liberally to the deserving poor. He regularly gave stipends to about a hundred students in the city and mofussil, and supplied books to the poor children. His charity was of the silent type and his left hand did not know what his right hand gave. He was an ardent lover of music and patronized musicians. He was also for a long time the President of the Music Academy. Need we say that he was thus a 'model citizen' with a very high sense of duty?

This Titan, for he was one among men of his age, has left us. He has however left behind indelible marks of his achievements in every sphere of human activity. He lived long enough to see the fruition of most of his schemes and also to enjoy the fruits of his

labours. We expected him to live still longer and participate in the Golden Jubilee of the ANTISEPTIC in 1954. But this was not to be. Man proposes; God disposes! He lived to see his two worthy sons gracefully ascend the ladder of success. Dr. U. KRISHNA RAU who was the associate Editor since 1924 is now a Minister of State and Dr. MOHAN RAU is amongst the eminent top-ranking Surgeons of India and is very popular among the citizens of Madras. Dr. RAMA RAU was a versatile genius and had a *flair* for service to the country and to his fellowmen.

The death of Dr. RAMA RAU is widely mourned by all people and numerous messages of sympathy and condolence have been received; the tributes paid to the departed leader at various places and at meetings of public bodies including the State legislatures and City Corporation have overwhelmed us with their sympathy and praise. We need offer no apology therefore, for publishing here the tribute paid by Sri C. RAJAGOPALACHARI, the Chief Minister of the Madras State (who was formerly the Governor-General of India) on the 12th May 1952 on the floor of the Madras Legislative Assembly in moving a condolence resolution touching the death of this 'model citizen'.

"In the early hours of this morning, Dr. U. Rama Rau one of the leading figures in the City of Madras, passed away in peace without any period of illness or pain, brief or long, preceding the event. It gives me a kind of sad satisfaction. Dr. Rama Rau was born in 1874. He was Good Samaritan to all the young people in the City in the late nineties of the last century among whom I was one, being a young lodger in the City of Madras at that time.

"Dr. Rama Rau was for a long time member of the Madras Medical Council and also its President. He was the Editor of 'ANTISEPTIC' and 'HEALTH' and published several articles on health and hygiene. He was also President of the Indian Medical Association and Superintendent of the St. John's Ambulance of this district. Apart from his active and valuable services to his own profession, he was elected Councillor of the Corporation for many years and member of the University Senate and the old Legislative Council of Madras. He became a member of the Council of State in Delhi in 1927 and resigned in 1930. During that period he was a member of many Committees of the Government of India. When a popular ministry took charge in Madras in 1937, he was member of the Legislative Council and was elected President from June 1937 to March 1943. Hon'ble members, who served in the legislature at that time know the manner in which he discharged his duties. He was an exceedingly pious and good-hearted and a benevolent man. The quality of public work which he did during his long life is worthy of commendation. His two worthy sons and grandson also belong to the same noble profession. In fact, Dr. Rama Rao was a model citizen and a model head of his family. I hope his family will maintain his tradition of service and politics without egotism or rancour."

May His Soul Rest in Peace.

Om : Shanti : Shanti : Shanti.

THE B.C.G. CAMPAIGN AGAINST TUBERCULOSIS

Further Extension Contemplated

INAUGURATING the new Tuberculosis Sanatorium the other day at Pollachi, Mr. A. B. SHETTY, Minister for Health, stated that the Madras State Government is considering the question of extending the B. C. G. campaign to the districts with the help and co-operation of the local bodies. He referred to the awareness of the districts to the need for opening sanatoria and clinical centres in the districts for detecting, isolating and treating cases of Tuberculosis--which was levying a heavy toll of precious human lives in this country. It has been computed that one person is dying every minute in our country, as a result of this dire disease. Mass radiography as practised in the western countries has helped in the prompt and early detection of incipient cases. Facilities for this do not exist to the needed extent in India and the cost involved in providing efficient portable units for this work is enormous. The magnitude of the problem thus assumes extra large proportions. The Minister rightly stressed the necessity for a three-pronged attack on the problem *viz.*, (1) the prevention of the spread of the disease from known cases of infection, to others in their homes or places of work; (2) the protection of susceptible groups of persons, children and adolescents, who are exposed to the infection; and (3) health education. The approach to be made in these three directions will have to be such as would readily appeal to the masses.

The existing facilities for detection, isolation and treatment are very meagre and an adequate number of trained personnel is not available. "The courses of training offered to the practitioners for specializing in this work are not adequately availed of by them" complains, the Minister for Health. But what inducements we ask, have been offered to them for taking this specialized training? Human nature being what it is and has been since the dawn of creation, unless suitable inducements by way of special emoluments or guarantees of Governmental help and support, financial and otherwise, are forthcoming the pious hopes and wishes of the authorities will not be fulfilled. Even with a State subsidy (which is obviously very meagre and so unattractive), the scheme of rural medical practitioners has failed. Tuberculosis work is deemed a specialized branch and certainly needs special training. The general practitioner is not interested ordinarily in treating such cases for several reasons, not the least of which is that it is time consuming, requires constant and often extra attention to counter emergencies and is not as paying as other ailments of short duration and quicker amelioration under ordinary care. If the G. Ps. are to take the specialized or refresher courses offered to them, they have in these days of competition to risk loss of the practice they have assiduously built up during years of hard and diligent work. This is certainly

the main, if not the only reason why the schemes of refresher courses and specialized training and grant of diplomas have not been as popular and as sought-after as they should really be. It is indeed deplorable that this should be so. But we cannot help sympathizing with the private practitioners who can ill afford to take risks, such as would be inevitable in taking these special-courses.

Theorizing apart, when we come to face hard facts, the control of the spread not only of tuberculosis but also of other diseases like malaria etc., is closely related to the improvement of the socio-economic conditions in the country. "This", says our State Health Minister "will require a long range plan and take a long time and colossal sums of money to improve the sanitation, housing conditions, and the food situation, and thus remove the basic causes of tuberculosis". While we are indeed glad to note that Ministers and Governments of the Centre and the States are quite alive to the root causes of disease, we feel an utter sense of frustration when, at every step we are told that the finances of the Government cannot "now or yet permit" the expenditure of such large sums of money as are necessary for tackling these *remediable* causes of misery, suffering and disease. We have been crying hoarse for years over this step-motherly treatment by successive governments (starting with the foreign British rule) accorded to the preventive aspects of public health. The state of public health of any country is the most accurate index of the welfare and prosperity of its people. In our country which is riddled with numerous diseases nearly all of which are preventable, the first concern of the Government should, in our opinion be the improvement of public health, by an organized and systematic attack on at least the more prevalent and deadly diseases. The general welfare and prosperity of the country in all other directions will automatically follow, as they have done in western lands where phenomenally large sums of money, reckoned only in millions of pounds and dollars have been and are being spent every year in controlling and eradicating such dire diseases as Tuberculosis, Malaria, etc. from their midst.

The scheme of B.C.G. vaccination, against which there was at the beginning of the campaign some measure of ill-conceived opposition in our country has been put into effect in northern India on a huge scale; this procedure is now definitely believed to afford considerable immunity from tuberculosis, as judged by the results obtained in several countries of Europe during the last 20 years or more; since the end of the second world war, over 36 million children and adolescents have received tuberculosis testing and about 16 millions of them have been inoculated with the B.C.G. vaccine. This inoculation is particularly necessary for all persons continually exposed to infection in places, where there is an incessant influx of people and congregations of workers, school

children etc. The help and advice received from the W.H.O. in this direction have indeed, been valuable and immense. Since the Health Ministry in India decided to try mass inoculation with B.C.G. vaccine, many States have launched mass screening and vaccination in urban and semi-urban areas; such schemes are now in progress in the Punjab, Uttarapradesh, Bihar and Travancore-Cochin. So far 7 million persons have been screened and 3 millions of these have been vaccinated, without any serious reactions. It is claimed that 80% of those thus vaccinated will become adequately immunised against tuberculosis. The vaccine is manufactured at the special Bacteriological Institute located within the compound of the King Institute at Guindy and over a million doses are manufactured here every month and issued to various states free of cost. In Norway and Japan B.C.G. vaccination has been made compulsory by legal enactments, in respect of certain sections of the population. In Madras City many school children have received the benefit of this inoculation after due testing, during the last 12 months.

The proposed extension of the scheme to the districts should find favour with all people, the help and co-operation of the medical profession being very essential to make it a success. We therefore, earnestly request our readers to extend their active support and co-operation to the scheme which is aimed at eradicating a dreadful scourge from our midst.

The Late Dr. U. RAMA RAU

A Tribute from a Friend

By the sudden death of one of our most respected colleagues Dr. U. Rama Rau in Madras, we have suffered a grievous loss. During the first World War, when the writer was posted to the 108 combined Field Ambulance Hospital, Baghdad, Dr. Naidu, one of his colleagues there, was a class fellow of the late Dr. U. R. R. The former would be always praising the ability, fearlessness, and dashing spirit of the deceased.

The academic career of the deceased was brilliant and distinguished. He qualified as hospital-assistant along with Dr. Naidu. Eventually both of them secured jobs as hospital assistants in Madras Government Service. The paltry emolument of the job did not attract him and he said good-bye to the wretched service. Whilst Dr. Naidu stuck to it.

The late Dr. U. R. R. set up in general practice. By dint of hard labour and intelligence, he established a lucrative practice in no time. The writer came to know of his qualities from Dr. Naidu who was his great admirer. Dr. U. Rama Rau's organisation of 'ANTISEPTIC' is an example of his great ability.

In addition to his reputation as popular practitioner, and Editor of ANTISEPTIC and HEALTH, he took an active part in medical and general politics of the country and actively participated in all political movements of the time.

He was one of the pillars of the licentiates and would not budge an inch whenever he had occasion to plead for the amelioration of medical services in India.

To be frank, the writer was initiated by him in many activities of his life. Dr. U. R. R. was a widely read man of profound knowledge and deep culture. His

courtesy in dealing with his colleagues was one of his characteristics and he would always be remembered for his modesty and willingness to be of help on all occasions.

When hostilities ceased and the writer returned home, he, without delay commenced to subscribe to the ANTISEPTIC. The writer is so impressed by the editorials notes and articles appearing in the Journal that he continues to be an active subscriber. When the writer was in England studying at Newcastle-upon-Tyne, he used to find the ANTISEPTIC in various libraries there. The doctors and students of England were always eager to go through it. The writer was much impressed to see its popularity there. It reflects highly on the integrity and prudence of the late Dr. U. R. R. who endeared himself to his patients and his friends in all walks of life. The writer extends his deep sympathy to the members of his family.—RAJA RAM NAYAK, New Delhi.

A N E L E G Y

(Homage paid to the late Dr. U. Rama Rau by a Friend)

The world of doctors mourns and sheds
Tears : and sorrow with grief does spread,
When shocked with news U. RAMA RAU's dead,
Though old yet young the flower did fade.
He lived and he served his brothers the most,
Noble was his mission he fulfilled utmost ;
Great is the loss the family to bear,
Sincerely we condole and grief we share.
Bestow He may him eternal peace,
May he from Heaven bless and guide ;
Mortal thy frame your soul is divine,
Memories so sweet till sun moon shall shine.

—Dr. B. J. SHELAT,
Umreth, (Dt. Kaira).

Penicillin Therapy for Neurosyphilis at the Bellevue Hospital

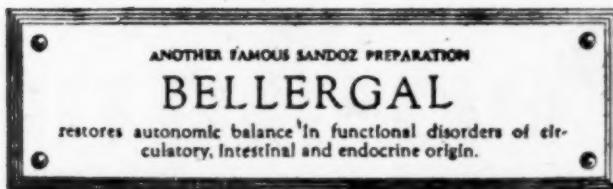
Drs. Dattner, Thomas and De Mello treated 438 patients exclusively with penicillin for various types of neurosyphilis in the active stage, and followed up the cases by carrying out examinations periodically of the C.S.F., for six months. The disease was promptly inactivated in 400 cases, and remained inactive for periods ranging from six months to six years. 38 cases were deemed to have failed with the initial treatment; so 31 of these were made to undergo fresh courses of treatment. 25 of them had one, 3 had two and three others had three treatments each. 27 of these 31 were thereby found to have been therapeutically cured when last tested. Dattner and his collaborators tried the use of different preparations at different times for treating neurosyphilis:—Procaine penicillin in oil together with the monostearate of aluminium; penicillin oil and bees-wax and also aqueous solution of sodium penicillin. The total dose of all these administered was 6 million units over a period of 15 to 20 days and the results were very satisfactory. Procaine penicillin in oil combined with aluminium monostearate, was found to yield much superior and excellent therapeutic results and to produce fewer side-effects as compared with the other preparations and so it is to be preferred in all types of neurosyphilis. Dr. Dattner *et al* advocate a course of 15 daily injections of 600,000 units each as a routine measure.—(*Jour. Venereal Dis. Inform.*, Washington, 32 : pp. 27-33, Feb. 1951).

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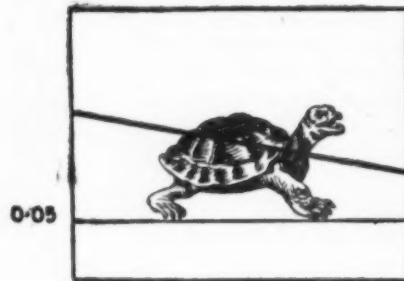
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Gleanings From The Medical Press

MEDICINE AND THERAPEUTICS

Parenteral chloromycetin.—(Vince Moseby, M.D., and Waddy G. Baroody, M.D., *Medical Times*, April, 1952).

Chloromycetin is a broad spectrum antibiotic isolated originally from "streptomyces venezuelae." It has since then been prepared synthetically. Its original route of administration was oral in doses ranging from 50 to 100 mgm. per kg. of body weight. The dose is given divided equally at intervals of 4 to 6 hours. The peak blood level is found after 2-3 hours.

It has also been demonstrated that the blood level starts dropping 8 hours after a single dose and at the end of 24 hours, there is no evidence of the drug in the blood.

The toxic effects after chloromycetin are few and the only ones reported are a leukopenia and anaemia. The possibility of the drug being given as injections either intramuscularly or intravenously was recently studied and the results were quite encouraging. The important objection that the solubility of the drug in water was so low that it was impracticable to prepare an injectable solution, has been overcome by the finding that chloromycetin dissolves readily in propylene glycol or still better in acetyl dimethylamine. It has been observed that a 25% solution of choramphenicol in acetyl dimethylamine can be given intramuscularly with few local reactions provided the injection is made deep into the gluteal muscle. The same solution can be mixed in glucose and saline and used for intravenous injection.

Intramuscular chloromycetin was as efficacious as oral dosage and the peak blood level was reached at the end of 4 hours. With a dose of 250 to 500 mgm. every 4 hours, a maintenance dose of 4 to 6 mgc./c.c. was consistently observed.

Chloromycetin was injected intravenously by mixing the drug in a diluting solution like glucose and saline or glucose in distilled water. The mixing of the

drug must be done carefully since the drug may be precipitated if layered on the surface. It was found that with a single 1.0 g. dose by the I.V. route a blood concentration of 20 micrograms/c.c. was reached at the end of 2 hours.

The parenteral route did not bring to light any new complication and was found to be quite safe. The ability to use the I.M. and I.V. routes along with the oral route constitutes a definite advantage in the clinical use of the drug.

A comparison of the various drugs used in treating epilepsy.—(Ives, E. K., *Jour. Amer. Med. Assoc.*, Dec. 1st 1951, pp. 1332-35).

Ives has made a careful comparative study of the efficacy of six different drugs commonly used in the treatment of epilepsy viz., phenobarbital, diphenylhydantoin sodium, trimethadione, mephobarbital, methylphenylethylhydantoin and amphetamine. The results of this comparative study are summarised below:

(1) *Phenobarbital*—(*Out and out the best in this series*)—Tried in 111 patients, 53 of whom received this drug for the first time. 24 out of these 53 had relief and suppression of seizures. Out of 24 others who had taken other anti-epileptic drugs before, only 6 responded. Both grand mal and petit mal were benefited most and equally, the psychomotor type to a slight extent and the Jacksonian type not at all. The toxic side effects were drowsiness, dermatitis, dizziness and staggering. There were changes noticed in behaviour. The treatment had to be stopped only in 9 cases.

(2) *Diphenylhydantoin sodium*—Unlike phenobarbital this drug was found useful and effective even in cases which had received other antiepileptic drugs. 92 patients were treated with this drug; no case obtained total relief, 28% had only partial relief and in 22% there

was aggravation of symptoms. In psychomotor and Jacksonian types this drug was very effective. Toxic effects were encephalitis, psychosis, vomiting, hirsutism, dermatitis and staggering.

(3) *Trimethadione* was tried along with other anti-convulsant drugs in 42 cases and alone in 2 cases. Of the latter only one was relieved of the autonomic seizures. Of the former 15 showed improvement, and 13 deteriorated. The toxic side effects consisted of delirium, dermatitis, gastro-intestinal upsets, general malaise, neutropenia, dizziness and glare. The treatment had to be stopped in 11 cases.

(4) *Mephobarbital* :—Of 5 patients who were treated with this drug exclusively 3 improved and 2 deteriorated. Of 64 others who received this in addition to other anti-convulsants 6 were controlled 20 had a fewer number of seizures and 14 worsened. Toxic symptoms included sleepiness, fatigue, dermatitis etc. The treatment had to be stopped in 10 cases.

(5) *Methylphenylethyl hydantoin* :—This drug was found to be useful only in the Jacksonian and petit mal forms. Toxic effects observed included febrile reactions, dermatitis, agranulocytosis, drowsiness and even hallucinations.

(6) *Amphetamine (Benzedrine)* was given usually to counter the depressant effects of the anti-epileptic drugs used. Only about 20% of the cases was benefited and these were mostly in the grand and petit mal types. Toxic side effects included, sleeplessness, anorexia, irritability, impotence and loss of weight.

General assay of comparative results :—A complete control, characterized by total absence of seizures or auras within six months was effected in only 65 or 31% of cases. Of these 65, 25 were treated with a combination of phenobarbital alone and diphenylhydantoin, 20 with phenobarbital alone 5 with diphenylhydantoin alone, 4 with a combination of mephobarbital and diphenylhydantoin, 2 with methylphenylethyl hydantoin alone, and the rest with mephobarbital alone. Phenobarbital was found to be the most effective in controlling seizures and to produce the fewest toxic side effects.

Rheumatoid arthritis and amoebiasis.—(Robert E. Rinehart, M.D.—Wheeler, Ore).

Of the last 116 patients with rheumatoid arthritis or rheumatoid spondylitis seen by the author nearly 90 per cent have had amoebiasis. This startling finding will not be accepted without further confirmation. It is being presented at this time to provide an impetus for additional studies.

Historically, the work grew out of attempts to eliminate foci of infection in patients with rheumatoid arthritis. Since it is a well-demonstrated fact that from 10 to 20 per cent of the population is infected with *endamoeba histolytica*, it seemed worthwhile to diagnose and treat this infection when it coexisted with rheumatoid arthritis. Early it was noted that the incidence of amoebiasis, without obvious intestinal symptoms, was extraordinarily high in this group of patients. This observation had been simultaneously made by Perkins. Rapaport recently described three patients with rheumatoid arthritis and amoebic dysentery whose arthritis cleared up promptly when the bowel infection was treated.

Because a certain degree of scepticism exists in many quarters about accuracy of diagnosis of amoebiasis, ten stool specimens were forwarded to the U. S. Public Health Service, through the Oregon State Board of Health, for confirmation. Findings agreed completely with those of our laboratory. Surveys done by our laboratory during the period of this study do not reveal a higher percentage of infected individuals than reported elsewhere. In a recent series of 400 consecutive patients without rheumatoid disease, 96 had symptoms which required stool examination as part of diagnostic study. Thirty-five were found to be infected. This would represent infection diagnosed in 9 per cent of patients seen, or in 38 per cent of those having stools examined.

Stool specimens for examination were obtained in several ways. Initially, warm stools obtained after saline cathartic were examined for trophozoites. This procedure is economical in time and materials and will correctly diagnose

about 50 per cent of infected patients. If further studies were indicated, normally passed stools, obtained at 48-hour intervals, were concentrated by zinc sulphate flotation and stained with iodine for identification of cysts. When it was necessary to examine stools of patients residing at a distance, a portion of stool was preserved in d'Antoni's iodine and mailed to the laboratory.

The last 101 consecutive patients with rheumatoid arthritis and the last 15 consecutive patients with rheumatoid spondylitis seen by the author compose this series. Only a few typical case reports are summarized here. Others will be discussed in a subsequent paper on treatment of amoebiasis. Ages ranged from four to seventy six, the majority being in older age groups. Sixty per cent of those with rheumatoid arthritis were females while all of those with rheumatoid spondylitis were males.

In general, marked improvement in the arthritic state resulted from treatment of amoebiasis. It can be briefly stated that the degree of improvement depended on three factors: Extent of permanent structural deformity, duration of amoebic infection and success of amoebicidal therapy.

Diagnosis	No. of Patients	Infected with E. histolytica	Per cent.
Rheumatoid arthritis	101	92	92
Rheumatoid spondylitis	15	13	87

Of the eleven patients in whom no evidence of amoebic infection was found, two had bronchiectasis and one a severe chronic cystitis. No focal or systemic infection was found in the remaining eight.

SUMMARY AND CONCLUSIONS

One hundred and one consecutive patients with rheumatoid arthritis and 15 consecutive patients with rheumatoid spondylitis were examined for infection with *endamœba histolytica*. Ninety-two per cent of those with rheumatoid arthritis and 87 per cent of those with rheumatoid spondylitis were found to be infected. Improvement and at times complete remission of the rheumatoid state was noted when the amoebic infection was successfully treated (details to

be reported later). The findings strongly suggest an etiologic relationship between most cases of rheumatoid arthritis and infection with *endamœba histolytica*.—*Northwest Medicine*, March 1952.

Use of milk to control vomiting caused by aureomycin.—Bartholomew of the Mayo Foundation and Nichols of the Division of Medicine, state:—"Although aureomycin is readily absorbed into the serum after oral administration, the effectiveness and ease of this method of administration is often seriously impaired by the nausea and vomiting which may be produced by the aureomycin. Aluminum hydroxide gels, milk and various alkalies have been administered simultaneously with the aureomycin in an attempt to alleviate the gastro-intestinal irritation.

We have tried several different means of controlling the gastro-intestinal irritation. Of these methods, the administration of 200 cc. (1 glass) of milk simultaneously with the aureomycin seemed most effective. Of a group of 50 patients receiving this combination, only 4 experienced significant nausea and vomiting. Further studies using milk with the aureomycin were carried out in order to ascertain whether the milk interfered with the absorption of the aureomycin.

Aluminum hydroxide gels when they are administered simultaneously with aureomycin usually control the nausea and vomiting satisfactorily. Several studies have shown however that when aluminum hydroxide gels are administered with aureomycin, the amount of aureomycin detectable in the serum is significantly less than when aureomycin is administered alone.

Our observations confirm the previous reports of Waisbren and Huckel and of Boger and his associates. Clinical results obtained in the treatment of infections suggest that, in spite of this interference with absorption, sufficient aureomycin is absorbed from the gastro-intestinal tract after the administration of 750 mg. of aureomycin with 15 c.c. of aluminum hydroxide gel. However, since the administration of aluminum hydroxide

gels impairs the absorption of aureomycin, the administration of these gels with aureomycin certainly seems contraindicated.

Furthermore, the use of aluminum hydroxide gels to control gastric irritation is usually not necessary if the aureomycin is administered with milk. Except in an occasional case, vomiting is controlled by the administration of milk and the patient is able to retain aureomycin with a minimal amount of distress. Fortunately, the administration of milk with the aureomycin does not impair the absorption of the aureomycin from the gastro-intestinal tract. The levels of aureomycin in the serum after the administration of 750 mg. of aureomycin with 200 cc. of milk are approximately the same as the levels obtained when 750 mgm. of aureomycin is given alone to fasting patients. The therapeutic results obtained when aureomycin and milk have been administered simultaneously have been satisfactory. The administration of milk with aureomycin therefore, appears to be an acceptable method of reducing gastro-intestinal irritation and vomiting without interfering with the absorption of aureomycin into the serum.

(From the Proceedings of the Staff Meetings of The Mayo Clinic, Volume 25, No. 13.—*Sind Med. Jour.*, March 1952).

Control of barbiturates.—(Editorial *J.A.M.A.*, March, 29, 1952).

At the present time there is a movement afoot to draft legislation that would provide more extensive federal regulatory controls over the sale and distribution of barbiturates. One of the legislative proposals would involve a licensing or registration provision for physicians who prescribe or dispense these drugs. Apparently the suggestion for such proposed legislation comes from within the Federal Security Agency.

The recently enacted Durham-Humphrey amendment to the Federal Food, Drug and Cosmetic Act should provide adequate safeguards against the illegitimate distribution and sale of barbiturates that move in interstate commerce. The new amendment specifically prohi-

bits pharmacists from selling dangerous drugs such as barbiturates over the counter; furthermore, refilling of a prescription for a drug that cannot be used safely by the laity in self-medication is a violation of the law unless the pharmacist has express authorization from the physician to do so. There is need for at least a comparable strengthening of all state and local laws insofar as intrastate traffic in barbiturates and other dangerous drugs is concerned to obviate any need for more stringent control in this field by the federal government.

Barbiturates are valuable drugs that are used extensively in medical practice; however, sensational articles in lay publications have portrayed these therapeutic agents as a most evil drug menace. It is true that "sleeping pills" are not infrequently used by the laity to commit suicide. Psychopathic persons and other persons with unstable personalities seeking a "thrill" or a means of escaping from reality are known to misuse barbiturates; however, the great majority of practising physicians recognize the dangers attending possible misuse of these drugs and are careful to prescribe them only in quantities sufficient to meet the legitimate medical needs of the particular patient.

Legislation providing a federal licensing or registration system of control over the prescribing or dispensing of the barbiturates by physicians is unnecessary and would set a dangerous precedent. The Federal Security Agency, through the Food and Drug Administration, might well attempt to extend this type of control to cover all drugs having any significant potentiality for harm. By this means, the Administrator of the Federal Security Agency ultimately could attain the power to dictate in large measure the practice of medicine in this country.

The Committee on Legislation of the American Medical Association has considered legislation for the control of barbiturates and does not believe licensing of physicians to prescribe such drugs is necessary or desirable. It believes that the problem of the promiscuous sale and use of barbiturates can be solved by other measures. One of these

requires the help of those members of the medical profession who erringly prescribe too many tablets or capsules at one time. They are not serving the best interests of their patients or of their profession, when they resort to such careless practices. Careful control by physicians should be exerted over the habits of office assistants who may be tempted to dispense barbiturates without their knowledge, and even over careless ordering for patients in hospitals.

New anti-tuberculosis drugs.—The popular press has recently given widespread publicity to a series of new antituberculosis drugs, the *hydrazine derivatives of isonicotinic acid*. [The Tuberculosis Institutions in India, e.g. The New Delhi Tuberculosis Centre, the Tuberculosis Sanatorium at Tambaram have just started an experimental trial of the most active compound of this group viz., isonicotinic acid hydrazide under a carefully planned and controlled scheme. *Ed. Antiseptic*.] The chemotherapeutic activity of these compounds was discovered independently by the research staffs of the Hoffman-La Roche, Inc. and E. R. Squibb and Sons. in the course of a systematic screening of the thiosemicarbazones for anti-tuberculosis activity. The two firms have put out the drug under the respective trade names of Rimifon and Nydrazid. Animal experiments showed that they were very effective against *M. tuberculosis*: the mouse, guinea pig, rabbit and monkey were the test animals used.

The drugs are now under trial in a number of hospitals in U. S. A. notable among them being the Sea View Hospital on Staten Island and the New York Hospital—Cornell Medical Centre. 92 patients with moderately or far advanced pulmonary tuberculosis not responding to streptomycin, P. A. S. or other measures were treated with isonicotinic acid or its isopropyl derivative for 4 to 15 weeks at the former institution. Daily oral doses of 2 to 4 mg. per kg. of body weight of the former drug and 2 to 10 mg. of the latter drug have been used. The fever and malaise disappeared in

every case in 2 to 3 weeks; cough and expectoration were completely eliminated and remarkable increase in weight and appetite occurred. Bacilli disappeared from the sputum in 25% of the cases in 4 to 15 weeks and sharp decreases occurred in another 29%. Reduction in cavity size was noted in 23 cases but closure of the cavity occurred in only 2 cases. Exudate disappeared in 17 patients and increased in 4. Cure or pronounced improvement was seen in cases of tuberculosis laryngitis, otitis, and glossitis. Important chemotherapeutic effects were also seen in tuberculous meningitis and gastro-enteritis and in tuberculous disease of bone and joint. The Cornell investigators have used 3 mg. of isonicotinic acid hydrazide per kg. of body weight in a series of patients but they consider it too early to make positive statements about the value of this compound in the treatment of tuberculosis.

Evidence of drug toxicity was not seen in the Cornell Centre, but at Sea-View Hospital toxic symptoms e.g. hyperactive deep reflexes, leg twitching, insomnia, dryness of the mouth, bladder sphincter disturbances, and constipation were noted; also dizziness presumably due to transitory moderate decreases in blood pressure.

Following oral administration of the drug in man, the compound is readily absorbed and a high percentage is excreted in the urine in the first 24 hours. Drug resistance has not so far occurred but it is too soon to conclude that it will not eventually develop. Until the potential dangers are thoroughly studied and evaluated the drug should not be used indiscriminately. Their proper place in the scheme of things should first be determined.—(Editorial, *J. A. M. A.*, 22-3-1952).

The dysenteries.—(Boyd, J. S. K., *Br. Med. Jour.*, 23-6-1951, pp. 1440-43). (Refresher Course for General Practitioners).

I. BACILLARY DYSENTERY.—*Symptoms* :—The onset of bacillary dysentery is sudden; sharp gripping pains are followed by diarrhoea of increasing severity. The stools are at first liquid

containing flakes of blood-stained mucus but soon become very frequent and in a few hours consist solely of small quantities of blood-stained mucus. In severe cases the bowels move once or twice every hour; the desire to go to stool is constant. Severe griping and tenesmus are present and often considerable haemorrhage. In the most severe cases of all, large sloughs of mucous membrane are passed in a thin serosanguinous fluid. If left untreated such cases go on to a fatal end, death resulting from toxæmia and peripheral vascular failure..... In children, particularly in infants, bacillary dysentery is apt to assume a fulminating form. The child rapidly becomes collapsed and dehydrated, passing numerous small greenish stools with mucus. These are grave symptoms and need prompt and urgent treatment if the child's life is to be saved.

Diagnosis:—In acute cases the symptoms and the character of the stools present an unmistakable picture. In such cases the diagnosis rests between bacillary and acute amoebic dysentery. The possibility of both types co-existing should not be overlooked. The two have different incubation periods, bacillary being short and amoebic being long. An acute bacillary infection lights up an unrecognized pre-existing amoebic infection. In acute cases of bacillary type an experienced worker can establish the diagnosis by microscopic examination alone, and commence specific treatment on the basis of that finding. It will be desirable, when possible to isolate the causal organism by cultural methods.

TREATMENT.—General:—During acute stages the patient should be kept in bed and on fluid diet only. Free action of the kidneys must be ensured by copious drinks.

Specific:—British workers prefer sulphaguanidine because it has no tendency to crystallize out in the kidney tubules and so obstruct the secretion of urine. It is slowly absorbed from the bowel. It is more suitable for tropical countries, where excessive sweating may lead to a very low output

of concentrated urine in which crystallization is likely to occur. It is given to a normal adult in an initial dose of 6 gm. followed by four hourly doses of 3 gm. until the stools are reduced to about 4 per day.

Thereafter, it is given at 8 hourly intervals and is further reduced as the condition improves. Phthalyl-sulphathiazole (sulphathalidine) in 4 hourly doses, each of 1 gm. is another of the slowly absorbed compounds which has its advocates. Sulphadiazine is favoured by most doctors in U.S.A., and is given in an initial dose of 2 gm. followed by 4 hourly doses of 1 gm., the interval being lengthened as the patient's condition improves. The risk of renal obstruction with this drug is definitely greater than with sulphaguanidine and it is essential that the patient drinks large quantities of fluids. The effect of sulphonamides in bacillary dysentery is dramatic.

More recently the newer antibiotics have been used with success but in normal infections they do not possess any striking advantage over the less costly sulphonamides. Chloromycetin in doses of 250 mg. four hourly for a week, acts well.

Treatment of children:—Sulphonamides act well in infections of average severity in children and infants; in fulminating cases with much dehydration, antibiotics are preferable to sulphonamides; chloramphenicol is the drug of choice. Saline transfusions and other symptomatic treatment must be simultaneously administered.

Tests of cure:—In tropical surroundings, cases are usually so many that laboratory tests of cure in every case are impracticable. If the stools are solid and free from mucus it is safe to assume that infection has been overcome. In institutional outbreaks where laboratory facilities are available it is advisable to have six negative culture tests before discharging the patient as cured.

II. AMOEBOIC DYSENTERY.—Amœbic dysentery, is essentially a subacute or chronic disease, with a long incubation period and an insidious onset. The parasite causing amœbic dysentery has a world-wide distribution but the

disease itself is much more restricted to tropical and subtropical countries.

Signs and symptoms :—The onset is gradual; the abdominal discomfort, a grumbling pain and flatulence accompany moderate diarrhoea, in uncomplicated cases. The bowels move 4 or more times a day. The faeces are usually dark-coloured, part semi-solid, and part liquid, foul smelling, and containing varying quantities of dark coloured mucus. Palpation of the abdomen will elicit considerable tenderness, and heavily infiltrated parts of the bowel can be felt. Febrile disturbance is rare. Various complications may supervene as well as secondary infections which produce a condition similar to bacillary dysentery.

Diagnosis can be established by the demonstration of the active trophozoites of *E. histolytica* in the mucus, present in the stools or in scrapings from ulcers. Cysts are not formed in the active phase of the disease and consequently are not found in the mucus. Sigmoidoscopic examination is of great help in formulating a diagnosis by revealing the character of the ulcers and by allowing scraping to be taken for microscopic examination. The mucus from a typical case is non-cellular, mononuclear leucocytes and partially digested cells from the bowel-wall being the predominant elements seen under the microscope. Polymorphs are scanty. Red cells are often seen in rouleaux and Charcot-Leyden crystals may be found.

TREATMENT.—The treatment of amoebic dysentery is at present in a phase of transition, owing to the growing conviction that some factor in addition to amoebae is concerned with the lesions produced. Diet should throughout be in accordance with the patients' appetite and of such a nature as not to irritate the bowel.

Emetine remains the favourite specific. In active infections 3 to 5 daily doses of 1 grain given subcutaneously will relieve the acute symptoms. This should be followed by a 10 day oral course of E.B.I. (Emetine Bismuth Iodide) in enteric coated tablets or capsules. It should be given late in the evening, preferably preceded by 1 g. of phenobarbitone as a sedative to prevent

nausea and vomiting. During any form of emetine treatment the patient must be kept in bed.

It has been customary to supplement emetine treatment with yatren or quinoxyl, diodoquin or carbarsone. Chiniofon (yatren) can be given as a retention enema along with E.B.I. treatment. The bowel is washed out with 500 c.c. of 2% sodium bicarbonate and an hour later 200 c.c. of 1 per cent solution of yatren is slowly introduced and retained for 6 to 8 hours. Alternately, the 3 compounds may be given after E.B.I. treatment; chiniofon 1 grain daily for 10 days or longer in powder form in capsules or tablets; diodoquin, three tablets of 200 mg. 3 times a day for the same period; carbarsone capsules of 250 mg. thrice daily also for 10 days or more. None of these "blunderbuss" courses can be considered absolutely satisfactory.

Of recent years, antibiotics have changed the whole outlook. Penicillin before emetine was first used with good effect in chronic relapsing cases. It has been superseded by 'bacitracin', 'aureomycin' and 'terramycin'. The last two have both amoebicidal and bactericidal activity. They are given in doses of 1 to 2 g. daily for 10 days. It is probable that the best results will be achieved by combined or consecutive courses of emetine and one of these antibiotics, the former given for its known amoebicidal action and the latter for their bactericidal properties. Chloroquine, an antimalarial drug has also been found useful, particularly in the treatment of metastatic lesions in which emetine has been found ineffective. Dose 1 g. daily for 3 days and 1 g. for 24 days.

Acute non-specific pericarditis.— (Am. Jour. Med. Sc., September, 1951).

Non-specific pericarditis, a benign disease essentially, often presents many features closely resembling myocardial infarction. In the past decade attention has been frequently drawn to its frequent confusion with coronary thrombosis (Am. Heart. Jour., 1946, 1948). The importance of a proper diagnosis will be evident from the standpoints of prognosis and treatment of these two very different

conditions. Gilley *et al.*, of the Department of Cardiology in the Cincinnati University present a detailed report on 9 cases of non-specific pericarditis, which they studied closely to determine the factors of value, in distinguishing it from myocardial infarction and other conditions in which chest pain is a prominent symptom. The 9 patients included in this study were seen during the last 3 years, and they were all males of ages ranging from 24 to 59 with an average of 38 years.

The clinical features that would help to distinguish this disease from acute myocardial infarction are:—(1) Chest pain which is greatly aggravated by deep respirations (2) pericardial friction rub while occurs early and is heard over a wide area (3) associated respiratory infections (4) tendency for recurrent attacks and (5) favourable prognosis.

The initial E.C.G. in these cases offered very little positive help in the early diagnosis of non-specific pericarditis; however, serial electrocardiograms were diagnostic in showing the changes of pericarditis or aided in a negative sense in militating against myocardial infarction.

The authors have specially included three detailed case reports to illustrate the varying clinical manifestations of this disease; two of them

present clinical features simulating myocardial infarction, and one of those which had a fatal termination, suggested the possible harmful effect of anti-coagulant therapy. One demonstrated the recurrent nature of non-specific pericarditis.

Terramycin.—Clinical, pharmacological and bacteriological studies. (*Am. J. Med. Sciences*, March, 1951, pp. 256-263).

Sayer and his colleagues used terramycin in the treatment of 108 cases of infection due to gram positive and gram negative organisms. Adults were given 1 g. orally every 6 hours; and maintained a blood level of 5 to 10 micrograms per c.c. throughout the day. Children were given doses proportionately to their weight. Intravenous injections of 250 mg. gave a blood level of 5 to 10 micrograms per c.c. an hour later and 1 to 5 micrograms after 12 hours. Toxic reactions such as nausea, vomiting and diarrhea were not common. 24 of the 28 patients suffering from urinary infections, 18 of 21 children with whooping cough, 22 of 25 children and all the 13 adults with pneumonia showed satisfactory clinical improvement. There were favourable responses in the case of bacillary dysentery, tonsillitis, erysipelas, bronchiectasis and enteric fever.

SURGERY

Lumbar sympathectomy for arteriosclerosis of lower extremities.—(*New Eng. J. Med.*, 244: pp. 199-203, 8-2-1952).

Edwards and Crane found that conservative medical treatment was of little or no use in arteriosclerosis of the lower extremities and therefore, had recourse to surgical treatment in treating 100 patients. The operation performed was lumbar sympathectomy. Amongst these patients were 27 who were suffering from diabetes. Two patients died and six had to undergo amputations of the thigh, after undergoing the lumbar operation. The remaining 98 were discharged cured or and greatly improved. A follow-up study

of most of these cases was made for three years and a few for nine years. There were nine deaths during this follow-up period. The eighty-nine patients still living are doing well and in a good condition. The affected foot has after operation been invariably better than the unoperated foot. The presence of diabetes had a slight disturbing influence; other visceral diseases and severe hypertension also exerted an unfavourable influence, but to a lesser extent than diabetes. The previous loss of the contralateral limb was decidedly an unfavourable factor; a good temperature response to paravertebral or spinal anaesthesia, is usually associated with a good prognosis and rapid amelioration, failure

to respond does not necessarily betoken an untoward result in the end. The authors consider that this operation should be more widely employed in view of the fact that its general effect on the patient and on his limbs is manifestly good.

Intra-arterial and oral priscoline.
—A clinical report. (*Am. Jour. Surg.*, 81, 336-340, 1951).

17 cases of peripheral vascular diseases of various types were treated with priscoline, given by mouth and intra-arterially; the dose was 50 mg. intra-arterially once a day together with 50 mg. orally 4 times a day for a maximum period of 21 days. The patient was told to be in a recumbent position for one hour after the injection. Good results were obtained in arterio-sclerotic leg ulcers, in scleroderma, and in chronic thrombo-phlebitis. 14 of the 17 cases were cured and the other 3 greatly improved.

Local application of chloramphenicol.—(Coppleson, V. M., *Lancet*, 14-6-'51).

Recent clinical trials of the local application of *chloromycetin* suggest that in infected wounds, ulcers, burns, and even wounds infected by gas-forming organisms local application is superior to administration by mouth. It is now being used by the author, by irrigation, surface application of powder and ointment in a wide variety of cases, including burns and bed sores. Pure powder has been used prophylactically in wounds at the time of operations where silk has been buried, as in repair of ventral hernia; it has been found successful in post-operative dressing of anal fistulae. It appears to stimulate healing. It has been applied in the following ways:

(1) As a lotion: to irrigate wounds and cavities by adding the contents of 2 to 4 capsules (500 to 1000 mg.) to 5 c.c. of distilled water.

(2) As a powder: pure chloramphenicol has been used for small ulcers, or placed in operation wounds. For surface wounds or larger areas a dusting powder of the contents of 2 to 4 capsules to one ounce of pulv. amyli and zinc oxide

equal parts has been used. A trial is now being made of 2 to 4 capsules to 1 ounce of lactose.

(3) As an ointment: 500 to 1000 mg. in one ounce of plain vaseline is being tried. Better bases may possibly be found.

The clinical trials made by Coppleson of the local application of chloramphenicol have been most impressive. The antibiotic is probably more efficient when applied directly to open wounds than when administered by mouth.

Proctologic manifestations of carcinoma of the prostate.—(*Am. Jour. Surgery*, 83, 4, April 1952).

Jackman and Anderson of the Mayo Clinic review 27 cases of carcinoma of the prostate that had invaded the wall of the rectum obstructing its lumen or that had produced an extra rectal mass. These cases demonstrate that considerable confusion can and does arise with respect to the diagnosis. The most unfortunate error which can easily occur is to make a diagnosis of primary carcinoma of the rectum in these cases in which invasion of the mucosa has occurred secondarily from the prostatic lesion. In some of these cases only minimal symptoms referable to the urinary tract are usually present; and unless this possibility is remembered a needlessly extensive and often futile operative procedure may be undertaken. Carcinoma of the prostate should be considered as a possible etiological factor in an indeterminate rectal stricture of the male—in one of the 27 cases the patient had been treated for lymphogranuloma inguinale!!—. The length of time required for rectal involvement to occur cannot be accurately stated. In six cases prostatic carcinoma and rectal obstruction were diagnosed simultaneously at the first examination, while in other cases intervals of about 3 years and more had elapsed between the two diagnoses.

Rectal obstruction occurred and became increasingly worse in several patients who had either orchietomy or therapy with diethylstilboestrol previously. Colostomy was performed

as a palliative measure in one case in this series; in others colostomy was not considered necessary as enemas, laxatives and dietary regulations gave relief.

When obstruction is obviously entirely extra mucosal the lining of the rectum will appear normal except for a narrowed ring of tissue or a large bulging mass arising from the prostate. Under these conditions, thickened mucosal folds which bleed easily upon trauma but which appear otherwise normal will be found on biopsy to contain cancer cells of the prostate lying amongst the normal glands of the mucosa of the rectum. A fungating growth may often be seen in the rectum. This may be indistinguishable, from its gross appearance, alone from a primary carcinoma of the rectum. In some cases the only evidence of carcinoma invading the rectum will be a slight erosion of the mucosa or a small puckered area. The removal of specimens of tissue from all such suspicious areas will greatly help in the diagnosis. The microscopic appearance and characteristics of these lesions are their distinction from primary carcinoma of the rectum; and can be readily made by the pathologist.

In view of the findings recorded on these 27 cases Jackman and Anderson recommend that cystoscopy be performed in men with carcinoma of the rectum, who have any urinary symptoms before radical operations for rectal lesions are undertaken. It is particularly important that this procedure be adopted if the prostate gland cannot be identified digitally as being separate from the carcinoma. They also recommend a biopsy specimen of the rectal tissue be microscopically examined before resection of the rectum is performed.

Routine adoption of these two procedures will prevent an extensive rectal operation for a secondary lesion arising from the prostate.

Delay in diagnosis of carcinoma of the stomach.—(*Am. J. Surgery*, 83: 4, pp. 524-526, April 1952).

The early diagnosis of carcinoma of the stomach remains one of the

most challenging problems in medicine. Gray and Ward of the Department of Surgery in the Baltimore Medical School studied 104 cases which included only those in which the diagnosis was confirmed by pathological examination. In 95 the duration of symptoms before the patient consulted a physician was noted, and in 98 the duration of symptoms from the time a physician was consulted first, until, a positive diagnosis was made was recorded. The conclusions drawn by Gray and Ward on a careful assay of their findings are:—

(1) Carcinoma of the stomach in the majority of cases is a slowly growing disease.

(2) The potential seriousness of epigastric discomfort must be re-emphasized continually if carcinoma of the stomach is to be recognized at an early and curable stage.

(3) The X-ray diagnosis of carcinoma of the stomach, though accurate in 90 per cent of the cases is mechanically inefficient for early diagnosis.

(4) Improvement in methods of obtaining gastric material by aspiration and the perfection of better blood tests for cancer should prove of value in the earlier recognition of carcinoma of the stomach.

The result of the analysis of 104 cases showed that:—

(1) The average duration of symptoms from the onset of illness until a correct diagnosis was made was 14 months. The patient delayed nearly 8 months and the physician about 6 months.

(2) Epigastric discomfort was the first symptom in 64 per cent of the cases.

(3) 82 patients had x-rays of the stomach within 2 weeks before the time that a positive diagnosis of carcinoma was confirmed by operation or necropsy. 74 (or 90%) were diagnosed correctly and 8 (10%) were diagnosed as gastric ulcer presumably benign.

(4) Only 47 per cent. of these 74 cases were resectable when subjected to surgical procedures.

(5) It should be emphasized that

weight loss, which so many physicians think indicates cancer, also indicates extensive disease. In the series of 104 cases studied by Gray and Ward, weight loss was the first symptom in only about 2 per cent of the cases. Anorexia, also considered by many physicians as an important symptom of

cancer was present in only 5·7 per cent of the cases.

(6) It should also be emphasized that anorexia and weight loss occur really late in the disease and a careful study of every patient with epigastric symptoms should be made as soon as seen by the physician.

OBSTETRICS AND

The diagnosis of early carcinoma of the cervix.—G. W. Douglas and W. E. Studdiford, (*Surgery, Gynecology and Obstetrics*, 91:728, Dec. 1950) report that between January 1, 1938 and March 31, 1947, only 3 cases of "preclinical" carcinoma of the uterine cervix were found at Bellevue Hospital, and one of these was found in a patient who had a total hysterectomy performed. From April 1947 to the first of January 1950, 16 cases of early carcinoma of the cervix were found, 13 of which were intra-epithelial and 3 showed some degree of early invasion. In only one of these cases was a significant lesion found by inspection and palpation of the cervix. At the beginning of this study, the number of biopsies of the cervix was greatly increased, especially if the cervix showed any abnormal appearance at the squamo-columnar junctions. Later the cytological study of cases was begun. For this purpose Ayre's wooden spatula was used to take cell smears directly from the cervix, which were studied by a trained cytological technician. In the 16 cases of early carcinoma of the cervix discovered in this period, the smear method was not used in the first 3 cases. In the 13 other cases, the smear was positive in all but 2 cases; in one of these cases most of the lesion had been removed at a previous biopsy; and in the other the staining of the smear was not satisfactory; this smear was later restained, and found to be positive for malignancy. The authors are of the opinion that this smear method should be much more frequently used in the study of the cervix; and that pathologists and technicians should be trained in the detection of malignant cells in such smears. Positive smears must always be checked by biopsy and curet-

GYNAECOLOGY

tage to determine the character and extent of the lesion. If these methods can be applied "on a large scale," the end results of treatment of carcinoma of the cervix should be greatly improved.—*Medical Times*.

Radiation therapy of carcinoma of the vulva.—F. Buschke and S. T. Centril (*Radiology*, 56:193, Feb. 1951) report 10 patients with carcinoma of the vagina treated by radiation since 1939; 6 of these are living and free from demonstrable disease for more than three years, 5 of them for more than four years. Four have died, all within two years after treatment, one with metastases, and 3 with extensive uncontrolled local disease; one of these patients had incomplete treatment, no local radium, because of her poor general condition. All of the 6 surviving patients were treated with external röntgen-ray therapy and local radium. The röntgen radiation was given through oblique fields centered toward the vagina; for the local radium application, ovoids were used. None of these patients developed a fistula, or any severe degree of reaction in the bladder or rectum; all are in good health except that there is marked vaginal stenosis. From the Institut du Radium, 31 cases of carcinoma of the vagina have been reported; 16 of these patients are living without symptoms three years or more; of 20 patients in stages I and II, 15 are living and well. Of the 15 patients who have died, all but 2 died within two years with the local lesion uncontrolled; 2 died in four years from liver metastases. Only 3 of Institut du Radium cases were treated with intervaginal application of radium alone; in all other cases either external röntgen-ray therapy or tele-radium was

employed with or without local radium therapy. Poor results in radiation therapy of carcinoma of the vagina

reported by others is attributed to inadequate external irradiation.

—*Medical Times.*

DERMATOLOGY

Effect of penicillin on certain hitherto incurable dermatoses.—(*Jour. Invest. Derm.*, 16: 193-200, March 1951).

Thyresson of Stockholm reported beneficial results from the use of systemic penicillin in 57 cases of Herxheimer's acrodermatitis chronica atrophicans, during the last few years. Witten confirms these good results in 6 of his cases. He obtained marked

improvement in 4 cases, slight improvement in one and none in the remaining one of the six cases. When atrophy had sufficiently well advanced the results with penicillin treatment was not satisfactory. Systemic penicillin has also been reported to be of value in Kaposi's haemorrhagic sarcoma, by some observers. Witten however, could not get marked improvement in 6 cases which he treated with penicillin.

EYE, EAR, NOSE AND THROAT

Current treatment of tuberculosis of the larynx.—The general measures for the treatment of pulmonary tuberculosis apply to the larynx as well. A most powerful factor in the treatment of tuberculosis of the larynx is rest of this organ, and the best way to obtain rest is a regimen of complete silence. Next in importance comes the antituberculosis regimen, which is too well known to be repeated here. From the point of view of the tuberculous larynx, an ideal environ would incorporate a dust-free, not too dry climate where it is pleasant to be outdoors.

Whereas vocal rest is a primary therapeutic consideration, local treatment itself varies according to the indications for its use, depending on the need for cleansing hygiene, control of pain, destruction of localized lesions, and stimulation of fibrosis. For ulcerative tuberculosis of the larynx, the use of Burmese chaulmoogra oil in 15% strength by intralaryngeal instillation is helpful, for it assists in promoting healing and relieves dryness of the throat. In the past, innumerable remedies have been advocated for local application to the larynx, but most of them eventually have been discredited.

Although anesthetic preparations

may be employed for the relief of dysphagia in the form of lozenges or powders such as orthoform, the most effective treatment for the relief of pain is injection of a 95% alcohol solution into the superior laryngeal nerve. The effect is almost instantaneous and lasts for days and even weeks or months. In some instances, the use of galvanocautery is indicated. It is used not to destroy the entire tuberculous area but rather to encourage fibrosis in the subepithelial tissues. Heliotherapy, radiotherapy, roentgen therapy and various recognized surgical procedures, such as pneumothorax, have their therapeutic role in various phases of the treatment of laryngeal tuberculosis.

While the final status of streptomycin in the treatment of tuberculosis of the larynx awaits more extensive and prolonged study, it appears that that the drug merits continued trials. In selected cases of laryngeal tuberculosis, the intramuscular injection of the drug and inhalation of nebulized aerosol promote considerable improvement. Toxic as well as allergic symptoms sometimes follow the use of streptomycin. The dosage has not been standardized, but intramuscular injection of 0.5 gm. every 6 hours for 7 to 14 days has been recommended. For inhalation, 0.5 gm. of streptomycin hydrochloride is dissolved in 20 to 30 cc. of normal saline; 2 to 3 cc.

is administered at the beginning of each hour for 10 hours every day.

It has been reported that streptomycin and para-aminosalicylic acid have a pronounced beneficial local action on tuberculosis of the larynx. Para-aminosalicylic acid was found to be especially valuable in patients whose organisms have been streptomycin-resistant. Dihydrostreptomycin was employed in a dosage of 0·75 gm. a day for 60 days, while para-aminosalicylic acid was given orally in doses of 12 gm. a day for 120 days.

Of timely interest is the recent report of the effect of hydrazine derivatives of isonicotinic acid on extrapulmonary tuberculosis. Laryngeal tuberculosis was treated at the Sea View Hospital in New York by Robitzek and his associates in the case of 10 patients, apparently with success. There was rapid relief from laryngeal symptoms, and this was exhibited by a time relationship and of a degree comparable with that exhibited by streptomycin. All of the patients with tuberculous laryngitis who were treated had previously been subjected to unsuccessful streptomycin therapy.

Finally, to the reader a word of caution. The claims made on behalf of hydrazine derivatives of isonicotinic acid in tuberculosis are most encouraging and very possibly signify an important advance in the treatment of the disease. However, the number of patients studied is small, the time in which the drugs have been observed limited, and the investigations performed by only a few physicians. It would be well to wait for additional evidence and confirmation of the work already done before hailing the isonicotinic acid compounds as the final therapeutic say-so in tuberculosis.—*The Eye, Ear, Nose, and Throat Monthly*, Vol. xxxi, April 1952.

Epistaxis—Causes and management.—While the subject of severe epistaxis is old, the importance of keeping it constantly before the medical profession has never been criticised. There are many reasons for this. Probably the outstanding one is the fact that each patient suffering from nosebleed presents a problem with varying causes. Another reason is the increased appreciation which physicians now have for the potential relationship of nosebleed to general diseases.

In a recent well-rounded article Hallberg reviewed the problem of severe nosebleed and its treatment. His description of the anatomy involved was by no means superfluous as physicians have failed to consider this aspect adequately when planning measures to be instituted. In the average case no treatment may be necessary as spontaneous cessation of bleeding frequently occurs. It is the persistent and recurring types of nosebleed that often pose a difficult problem even for the experienced rhinologist.

The patient who presents himself with excessive bleeding from the nose should be studied from the standpoint of age, history of injury and the possible existence of systemic disease. While deficiencies in the clotting mechanism of the blood may be at fault, Hallberg pointed out that these are seldom contributing factors. According to this worker, the bleeding is often due to a leak in the side of a vessel, which simply bursts often. He stated further: "When an older person has such a leaking vessel, the vessel tends to gape because of the sclerotic changes in arteries and veins and atrophy of smooth muscle. The bleeding of older persons particularly tends to repeat itself for about two weeks; it probably takes about that long a time for scar tissue to form and obliterate the vessel permanently".

As concerns the control of nasal bleeding, various procedures have been suggested. Ogura and Senturia presented a highly acceptable outline of available techniques which are grouped under two major headings, medical and surgical. Under the former are included: 1. pressure, 2. coagulants, 3. vasoconstrictive agents, 4. cautery, 5. sclerosing agents, 6. iontophoresis, 7. radium, and 8. unknown. Under the surgical group are included 1. submucous resection, 2. submucous elevation, and 3. ligation.

It is not feasible to discuss all of these respective procedures, nor, in fact, is it desirable to evaluate them. Most rhinologists pursue a definite approach to every problem on an individual basis and this is as it should be. It is interesting, however, to note Ogura and Senturia's conclusions as to management because their study evaluated the incidence, cause and control of nasal bleeding seen in a large hospital centre where both children and adults were observed. They found that the usual methods of haemostasis for anterior nasal bleeding, e.g., anterior nasal packing, electrocoagulation and chemical cautery, controlled single instances of bleeding but did not prevent recurrent episodes. "Recurrent episodes in children were controlled effectively by submucous elevation."

In the older adult group, Ogura and Senturia found it necessary to employ a combination of postnasal and anterior packing in a higher percentage of posterior bleeding. "This was required in a smaller number of the young adult group and was not utilized in any of the children."

Persistent epistaxis which cannot be controlled by the more conservative procedures

calls for ligation of a main artery. In many instances, ligation of the external carotid is indicated and should be performed without too much delay. It may prove to be a life saving measure.

It should be emphasized that in severe epistaxis hospitalization of the patient is highly desirable. One should not procrastinate too long in recommending it. Obviously, if blood transfusion should become necessary, facilities for the purpose must be promptly available.

Something need be said of the newer types

of gauze packing for which there have been encouraging claims. Doubtless they serve a purpose and are useful under certain circumstances. These do not, however, replace the need for hospitalization and main vessel ligation for the more severe situations.

In the final analysis, the treatment has to be governed by the existing indications. This has been previously emphasized. It is not so much a matter of exercising skill in the performance of a technique as it is a problem of judgement and prompt decision. The physician must be master of the situation.

—*E.N.T. Monthly*, Vol. xxxi, Apr. '52.

REVIEWS OF BOOKS, PERIODICALS AND REPORTS

Modern Headache Therapy—By ARNOLD P. FRIEDMAN, M.D., Physician in charge of the Headache Clinic, Montefiore Hospital, Associate attending physician, Presbyterian Hospital, Neurological Institute, New York; Area Consultant in Neurology, Veterans' Administration, New York. Published by the C. V. Mosby & Company, St. Louis, 1951, pp. 164.

This concise book on "Modern Headache Therapy" has been written by one of the authorities on the treatment of neurological conditions. This condition which is one of the commonest ailments met with in general practice has been dealt with in a detailed manner. The whole subject has been divided into 9 chapters. The first chapter deals with the diagnosis of headaches in general. This chapter also includes a headache chart which gives particulars in the history, which are very important. The nature of the pain, the timing of the pain together with associated manifestations during the headache are also described. This chapter also includes a detailed chart for a neurological examination of the patient. Chapter 2 deals with the treatment of headaches in general and has

been divided into small sections like pharmacotherapy, psychotherapy, physiotherapy and surgical methods. The chapter dealing with the treatment ends with a very good chart with regard to treatment. Chapter 3 deals with the mechanism of pain and is followed in the next chapter by headaches associated with intracranial disorders. In this chapter headache due to brain tumor and other causes of increased intracranial tension are accurately presented together with the treatment technique. Chapter 5 deals with headaches associated with extra cranial disorders like headaches from sustained muscular contraction of the head and neck, headache due to sinus infection, headache due to defects in the eyes, ears etc. Chapters 6 and 7 deal with headache due to systemic disorders and migraine headache respectively. The chapter on migraine headache is very well written and includes the latest therapeutic measures. The last two chapters deal with the psychogenic and post-traumatic headaches.

The book has been printed in clear bold lettering and the index is very clearly marked out. We recommend it to all general practitioners and students of medicine.—U.V.B.

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Messrs. Organon Laboratories Ltd., London, England, have been making this new anti-tuberculosis drug in substantial quantity for some months and have supplied 30,000 x 50 mg. tablets to two institutions nominated by the Government of India for trials (*vide abstract on page 497*). Similar clinical trials are being conducted in various parts of the world and it will be of general interest to know that the drug has been released commercially by Organon Laboratories, and various other makers, to hospitals and sanatoria in the U. K. This commercial release in the United Kingdom has been done with the

knowledge and consent of the Ministry of Health and it should not be long before a volume of clinical evidence becomes available from various parts of the world which will confirm or modify the high hopes arising from those trials in the U.S.A. regarding which there has been so much publicity in both the professional and the lay press.

Messrs. Organon Laboratories Ltd's Agents in India are Messrs. Martin and Harris Ltd., Mercantile Buildings, Calcutta 1, and Savoy Chambers, Wallace Street, Fort, Bombay, who will have the drug for commercial distribution if and when the Indian Government decides, it is prudent to allow its commercial release.

CORRIGENDUM

With reference to the advt of M/s. Jaswant Singh & Co., of Dehra Dun which appeared in the advt. page 54 of the May '52 issue of the ANTISEPTIC, the cost of the Emergency Bag is Rs. 30/- only and not Rs. 33/- as mentioned in the advt. The error is regretted.



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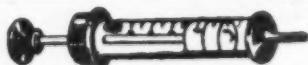
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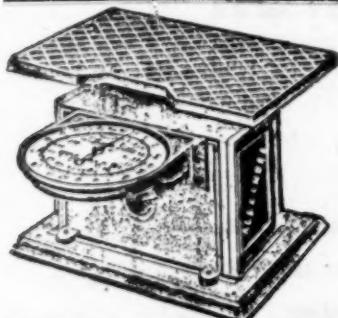
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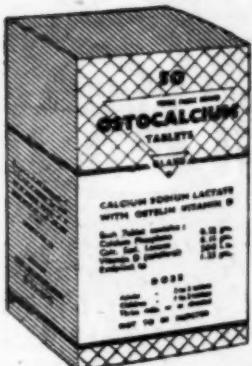
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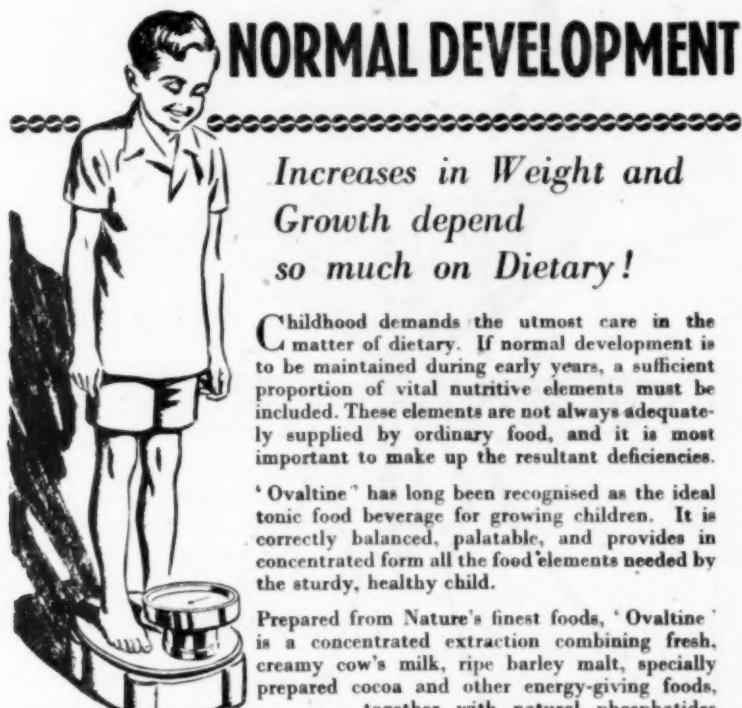
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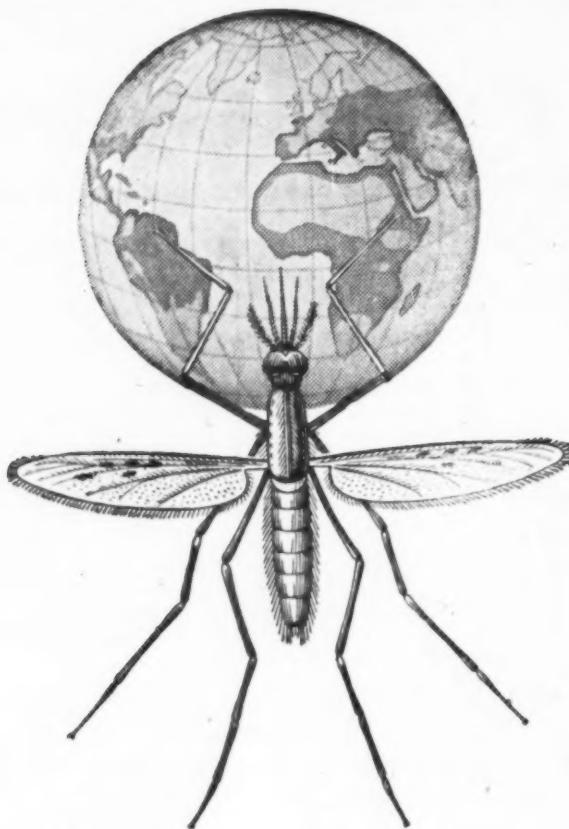
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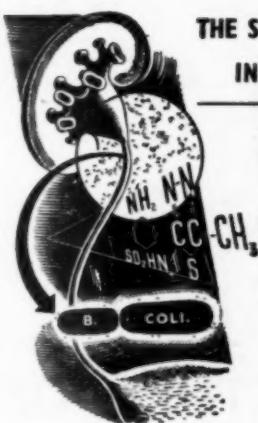
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.. B.W. 12x1gr. 10-0; 6x1gr. 9-8	Yeast tab. 5 gr. 1000 6-10	Mercarcrome 25gr. 2-8 100 gr. 9-0					
Compolan 2 cc. 5 5-8; 26 25-4	.. " 7½ gr. 1000 9-12	Milk Sugar 2-0 lb. Oil Mentha					
Beris 10cc. 25 2-8; 50 4-0; 100 5-4	Powder lb. 4-10	Menthol 3-10 oz. [1-10 oz.					
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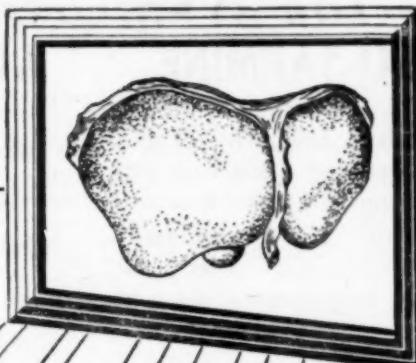
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Combistic (Strp & Pon.) 4-4 Sulph Tab. 1000	Sander 1000 500
P.D. Caequin Tab. 1-3; Combez 10cc.	" " " " 5amps 5-0
Penicillin G Cryst. 6-12	nile nide Eng. 9-0 4-12 " " " 5.c.c. x 10 8-8
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3 lacs x 10 cc. Oily Pfizer 8-12	cream 4 oz. Lilly 5-0 doz Hypo. Syringe (5.M. Re. 1 mere)
9 lacs Aqua 2-8 20 lacs. 5-8	Gentian Violet Jelly 4 oz. Lili 4-8, A.G. Jap. 2 5 10 20 30cc
Peni illin Skin Oint 1-Eye 0-11	Emetine amps BDH 1 gr. x 12 7-8 0-9; 0-14; 1-2; 2-0 3-4
" Losengin 20 1-0	1 gr.x12 13-0; 1 gr. x 25 14-8 Italy 1-10 2-4 2-14 4-4 7-0
Tab. 1 lac 12 4; 1 lac 8-8 Eng.	Endo 6 x 1 gr. 2-2 Germ. 1-2 1-8 2-8 3-0 6-10
P.A.S. Dumex Bayer Italy Rodia	" " P.D. 1 gr. x 6 6-10 Record Ger. 3-4 5-0 6-4 10-0 13-8
100 grm 10-4 12-8 4-8 6-4	" " " " " Comp. 6-4 9-0 11-4 —
100 tab. Herta 5-14	Cibazol 250's 18-0; 20's 1-12 , Italy 3-4 4-8 6-8 8-8 12-0
" " Bayer 6-4; Italy 3-12	MB 760 31-0; MB 693 500's 41-0 Boston 5-0 5-12 6-12 11-8 15-0
250 Italy 9-0; 500 17-0	Rybramin Bi2 amp. 7-0 B.D. Luck 7-0 10-0 12-0 16-0 20-0
P.A.C. tab. 75 6-8; 250 18-0	Vit B. Comp. 10 cc. 5-0 Japan, , 2-0 3-0 4-2 6-4 9-8
Cinchona Java 23-12; Eng 19-12	Folic Acid Comp. c liver 10cc. 4 12 Italy, E. cassi 1-8 2-0 2-8 —
Quinine Bengal 48-0; Java 49-8	Liver Ext. 10cc. 2 USP P.D. 3-12 India, , 1-10 2-10 3-0 4-8 5-4
Germ. 44-8; Howda 5-18	USP P.D. 5 Metal case Ind. 50cc. 5-12
oz Ind. 3-6; Howda 3-14	5 USP110cc. 4-6 20cc. 8-4 Bakelite case 1-8 2-12 3-0 —
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Q. Tab. 2grx100 2-4; 5gr 4-0 How	Cytostrips 1.7 I.M. Ger. 5-8 & Eng. All Glass Needles Luer Mount
5 gr. 1400 How. 45-8	Atophanyl 1.7-8; I.M. 6-12 [5-0] Jap. Ger. D.B. B.D.
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Oral Table s 1000 500 100	NAB. 15 x 10-10; 3 0-11; 45 0-13; Tooth Forceps Universal 4-12
Aspirin tab. 5-8	Nicotinic Acid 500 4-8 [6 0-16 Nicotin 100 x 5cc. 16-0 Camphor-in Oil 3 gr. x 100
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